

SHOW REPORT: HOT! News from Toronto and Frankfurt.

Amazing *For The Commodore* AMIGA[®]

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Your Original AMIGA[®] Monthly Resource

Volume 8 No. 2 February 1993

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Amiga Choices

From the A500 to the A4000

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- RockKey And RockGen Plus
- P.F.M. Plus
- The PatchMeister

PLUS!

TWO HARDWARE PROJECTS:

- Chip RAM expansion for the A500 and A2000





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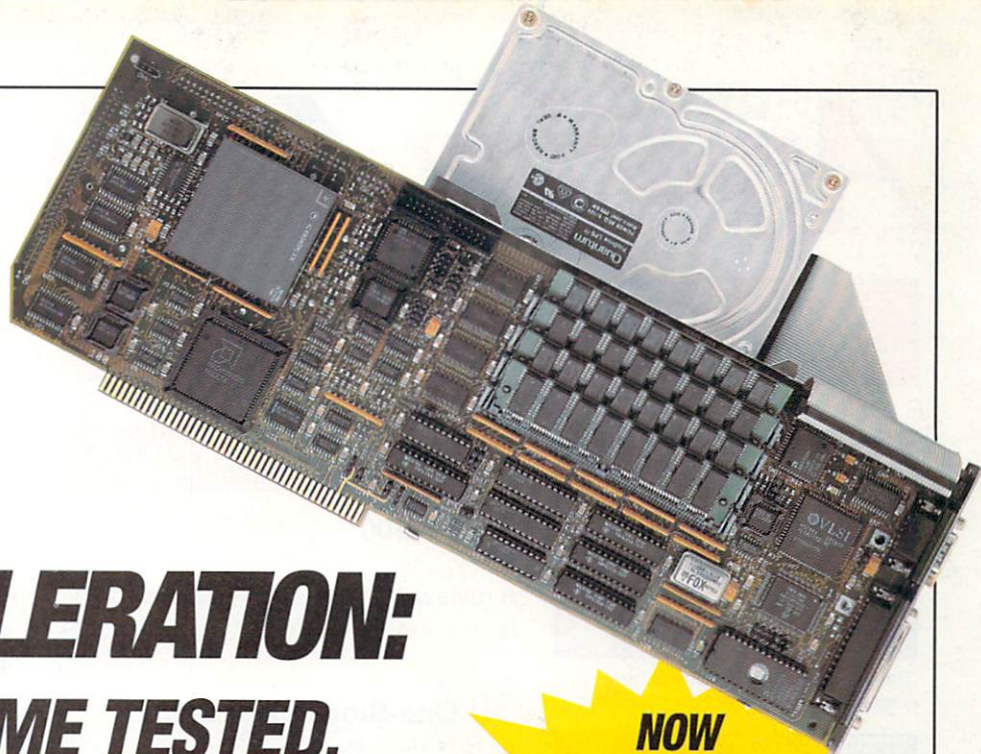
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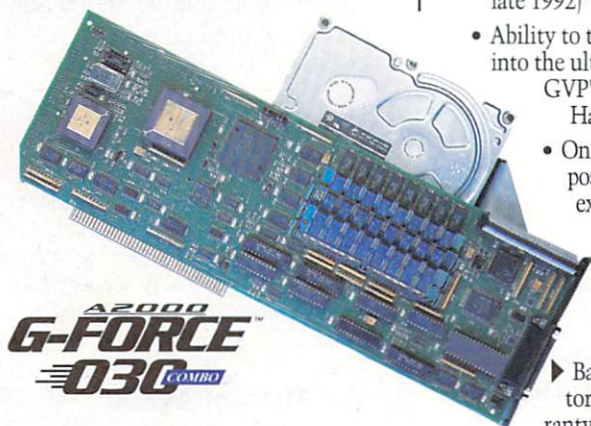
It's the fastest accelerator — bar none:

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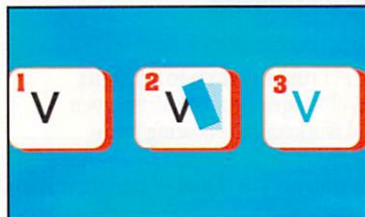
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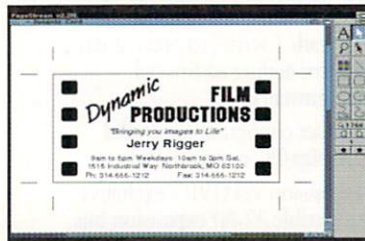
The PS-400 Wand Scanner from Migraph and optional sheet feeder.



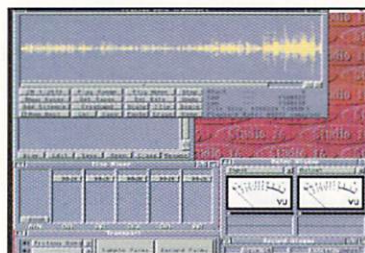
The One-Stop Music Shop is the latest musical masterpiece from The Blue Ribbon Soundworks.



Adding color to laser-printed documents is as easy as 1-2-3.



Putting PageStream to work for your business.



High-quality recording made simple with the AD1012.

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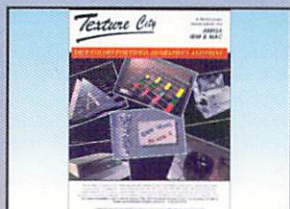
by Phillip R. Combs

Quickly and easily upgrade your Amiga 2000's Chip RAM with this project.



Exclusive from AC!

From the A500 to CDTV, it's all on page 48, complete with comparison data of all features!



Texture City, Paladin II, Combat Classics and Lure of the Temptress are just a few of the hot items in *New Products*.



Discover programming the easy way with **ARexx**.



Open the door to thousands of images from the many different **CD-ROMs** available for all the platforms.



If you have an urge to be in a dogfight in the skies over Europe, don't miss this month's **Diversions**.



There's trouble again in the **Forgotten Realms**—don't miss the action and excitement in *Diversions*.

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SHOW REPORT!



Hot! News from the **World of Commodore Amiga** in Toronto.



World Of Commodore mit Amiga 92 in Frankfurt, Germany attracted over 40,000 Amiga users, developers, and celebrities as well as a host of fancy displays from new cars to model trains.

GVP Introduces G-LOCK

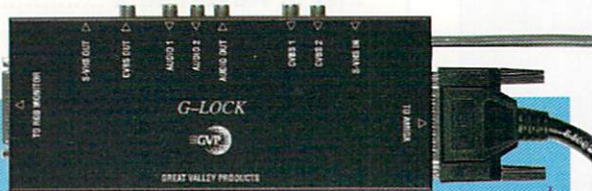
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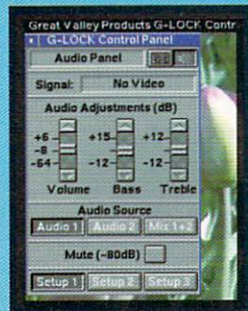
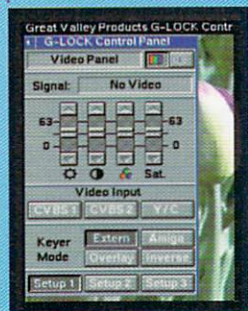
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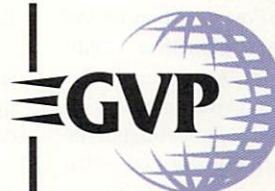
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EDITORIAL CONTENT

There has been a lot of interest lately in the comparison of different Amiga models. Commodore Amiga dealers are constantly explaining the different Amigas and how they compare. With the introduction of a new Amiga sales program from Commodore, we thought it would make a lot of sense to have a side-by-side view of the current line of Amigas.

Our aim originally was to show how deep the Amiga line is and what can be done with the different units. However, a few days into the program we realized that to be fair to both the Amiga and the large number of third-party software and hardware vendors who support it, we would need an issue similar in size to our *AC's GUIDE for the Commodore Amiga*. This was well beyond the scope of a single article.

ings of \$1,500, the Amiga 4000 should move extremely well.

Another surprise is the inclusion of the Amiga 1200 in the program. Reports have been coming in from Europe concerning record sales of Commodore's new consumer AA chip set Amiga. With sales like these, it seems extremely bold for Commodore U. S. to lower the price on the A1200 as it is being introduced in North America.

The A1200 will be available in two models. The Amiga 1200 and the Amiga 1200HD. Both bundles will include Softwood Inc.'s *Final Copy 1.3* and Electronic Arts *DeluxePaintIV AGA*. The Amiga 1200 will retail for \$599 and the Amiga 1200HD, with 40MB hard drive will retail for \$849.

Commodore seems very determined to support the Amiga and the new Advanced

Amiga Dealers, Unite!

In response to my editorial in the last issue of *AC*, David Spence called to recommend a further means of establishing better Amiga dealer information and support. He has suggested a Dealer Association and has offered his store's BBS as a central meeting area. The exact parameters of this organization and the scope of its duties are currently being designed by Mr. Spence and all interested parties. However, if you are an Amiga dealer, or you have interest in becoming an Amiga dealer, I suggest you contact Mr. Spence and become a part of this group during its formative stage. For more information contact:

David Spence
Video Speak Systems
799 Highway 72E
Callierville, TN 38017
Tel: 908 853 4401
BBS: 901 853 4804

Commodore announces a new Power Up program for the Amiga 4000 and Amiga 1200 to include everyone!

We have chosen to compare each machine currently sold through Amiga dealers. Through this review of specifications, we believe consumers can easily compare each Amiga and come to a qualified decision on which Amiga is correct for their application. This is very important when facing the opportunity of Commodore's new Power Up program.

Power Up!

Commodore's latest Power Up Program for the Amiga 4000 and Amiga 1200 has all the best from their previous programs and has dropped some of the pitfalls. Unlike previous programs, everyone can join in this Power Up program by buying an Amiga 4000 or Amiga 1200 by March 31, 1993. No trade-in units required! This is an excellent opportunity for new Amiga users and veteran Amiga users to own the latest in Amiga graphics hardware.

The Amiga 4000 Power Up bundle will contain an Amiga 4000-040 with a 120MB hard drive, ASDG's *Art Department Professional*, and Electronic Arts *DeluxePaintIV AGA*. Commodore's suggested value for this bundle is \$4,193. However, during the Power Up Program, this bundle has a Manufacturer's Suggested Retail Price of \$2,693. With a sav-

Graphics Chip Set. The new Power Up Program has the ability to provide these high quality Amigas to users at very reasonable prices with software designed to take advantage of the new chip set from the moment the Amiga is turned on.

More A1200 Support

I have openly requested any Amiga developer who is providing development support to the new Amiga 4000 or Amiga 1200 to keep us informed. We feel the innovative work done on these platforms will help increase the Amiga's public awareness. This month's new release is from MicroBotics, Inc.

MicroBotics, Inc. has joined the list of vendors who have produced hardware support for the Amiga 1200 with a combination Motorola 68881/68882 FPU math coprocessor and 32-bit wide memory expansion. The module connects to the internal 150-pin local bus connector and is expandable up to 8MB of RAM.

The MBX 1200 runs at a logged clock speed of 14.3MHz rate but is expandable to up to 50MHz. MicroBotics claims the new card with memory can improve a standard A1200 speed by eight times. The suggested retail price is \$189.

What's Next?

With Commodore's new Power Up Program, plus the stories from Commodore executives of world-wide sellouts of the new Amiga 4000 and Amiga 1200, it looks as if this year may be very exciting for Commodore. Vendors such as Electronic Arts and Digital Creations have introduced new graphics software with incredible abilities to take advantage of the AA chip set. Other vendors, such as ASDG, have already incorporated these new resolutions in their existing products. Hardware vendors are beginning to ship support products for the A1200 and A600.

Commodore has garnered a great deal of support for their efforts. Stories have come to us of such groups as the United States Army, big business customers, strategic products interests, and others who are taking note of Amiga technology and who have also purchased groups of Amigas for their applications. Perhaps Commodore's latest supporter is the most surprising. This month, the *Bandito* praises the work and forethought CBM is using to improve and sell the Amiga. It appears that with Commodore today, anything is possible.

Sincerely,

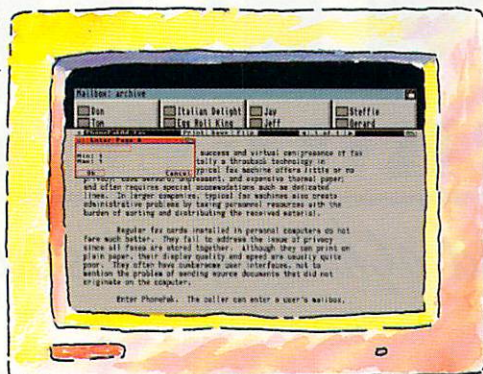

Don Hicks
Managing Editor

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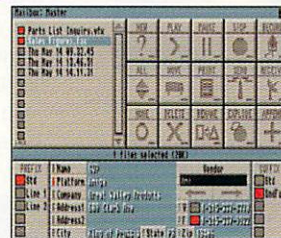
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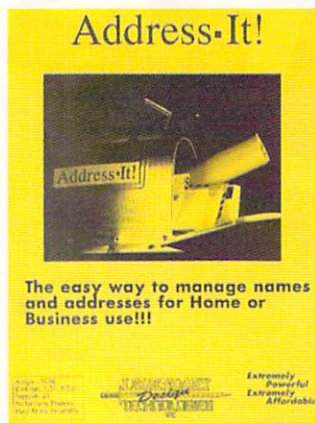
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and other neat stuff

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Address It! is an easy to use personal information manager. It can store up to 5000 names and addresses per file, including comments, three phone number fields, birthday, and a user-defined field. Through its powerful search and tagging facilities, you can categorize people in up to 15 separate fields and print custom lists with just the people you want in them. You can print roster lists, envelopes, labels, rotary cards, and addressbooks. Address-It! (\$39.95) works with as little as 512K, and is compatible with Amiga OS 1.2/1.3 and 2.0. *Legendary Design Technologies Inc.*, 25 Frontenac Ave., Brantford, Ontario N3R 3B7, (519) 753-6120. *Inquiry #207*



The Beginner's Guide to Art Department Pro 2.+

A new video tape designed to provide viewers with useful information to start mastering the potential of this indispensable Amiga graphics tool. This tape (sold for \$39.95) includes sections on Art Department's Text

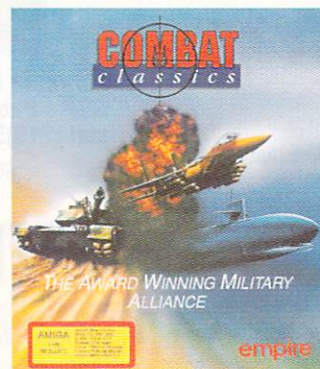
Visual Operator, the Prefprinter Saver, and the Enhanced Palette control. Also included are sections on Compositing Images, the Backdrop Loader, and the Broadcast Limit Operator. Additionally, there are sections on the Negative Operator, the Scaling Operator, methods for anti-aliasing text, and more. *Dreamworks Video Productions*, 5037 East Keresan, Phoenix, AZ 85044, (602) 893-3988. *Inquiry #208*

Combat Classics

The three greatest military simulations in one superb value pack. Games included: F15 Strike Eagle II, Team Yankee, and 688 Attack. F-15 Strike Eagle II re-creates the high tech surroundings of the USAF's premier dogfighter and strike jet.

Team Yankee is the definitive action simulation of modern tank warfare. Team Yankee tests your leadership and tactical skills to the full.

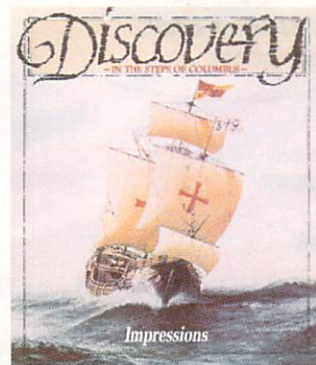
688 Attack Sub puts you in command of a top secret billion dollar sub in some of the most notorious political hot-spots of the globe. *ReadySoft Inc.*, 30 Wertheim Court, Suite 2, Richmond Hill, Ontario



Canada L4B 1B9, (416) 731-4175. *Inquiry #209*

Discovery—In the Steps of Columbus

From beyond the horizon, it beckons. Cross the Atlantic—never mind that you can only guess at the direction of the distant lands. Pirates will sink you in a cannon's flash—and other countries are eager to take America for their own. Your settlers will harvest the land, providing goods to trade to keep your ships and men exploring. But watch out for the suspicious natives, and your opponent's cities just over the horizon. *Impressions Software*, 7 Melrose Drive, Farmington, CT 06032, (203) 676-9002. *Inquiry #210*



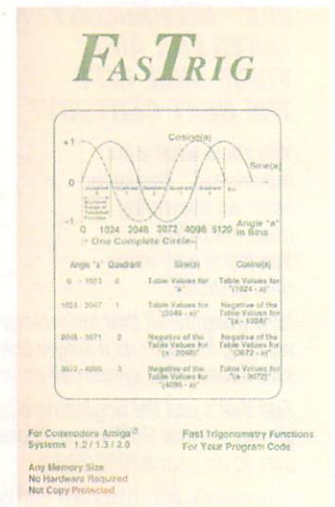
Eurofonts Video 3.0

Classic Concepts has released Eurofonts Video 3.0 (\$129.95), an extensive library of professional quality European and English typefaces compatible with both the Video ToasterCG and ToasterPaint. Eurofonts Video includes complete upper and lower case alphabets and symbols for more than 25 languages, with a unique Universal Keymap™ feature that streamlines text entry and allows multiple languages on one screen. Languages supported include English, Icelandic, Western European, Scandinavian, Finnish, Baltic, Polish, Hungarian, Albanian, and more. *Classic Concepts*, PO Box 786, Bellingham, WA 98227, (206) 733-8342. *Inquiry #211*

FasTrig

Parth Galen Software announces the publication of FasTrig, an Amiga implementation of very fast trigonometric functions using the

binary trigonometry concept. FasTrig (\$55) functions are provided on one non-protected 880-K diskette which includes object modules, source code, example code, and interface modules that allow use with any of the Amiga floating point math libraries. No particular hardware or memory sizes are required to use FasTrig, and all Amiga software versions can employ these routines. *Parth Galen Software*, P.O. Box 482, Cold Spring, MN 56320, (612) 685-8871. *Inquiry #212*



HyperCache Professional

HyperCache is a filesystem and device accelerator unlike any currently available of the Amiga personal computer system. It greatly improves the performance of not only hard and floppy disks, but also of CD-ROM and SCSI tape systems. Performance increases of up to 1000% are attainable through HyperCache's intelligent caching system and its ability to anticipate the demands placed upon the storage devices attached to your Amiga. *Silicon Prairie Software*, 2326 Francis Street, Regina, SK S4N 2P7, Canada, (306) 352-0358. *Inquiry #213*

Keys to Music Volume I: Learn to Read Music

Learn to Read Music is music teaching software that supplies knowledge to complement the learning of musical instruments. It covers musical terms, names of the notes, accidentals, note values,



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GVP'S IOExtender... ALWAYS THE RIGHT CONNECTION

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Two high-speed, multi-function serial and one parallel port give your A2000/3000 maximum connectivity. With GVP's IOExtender, you:

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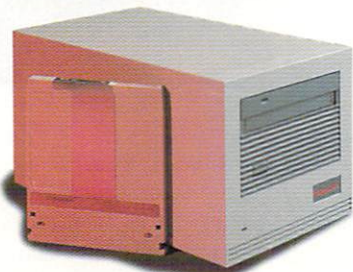
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Removable cartridge provides an easy and reliable way to add unlimited data storage capacity to any Amiga with a SCSI controller. Features:

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GVP'S A530-TURBO AND A500-HD8+ CLASSIC ... POWER YOUR AMIGA® 500 BEYOND AN A3000!



See why *Amiga World* says GVP's A530 Turbo could be the "Best A500 Expansion Box Ever". With its 68EC030 CPU running at a blazing 40MHZ the A530 runs your software applications up to 10X faster — smoother animations, better multitasking, quicker windows and more...

- Disk drives up to 240MB.
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- Free dedicated universal power supply.
- 2-Year Limited Factory Warranty.

GVP'S A500 PC/286 EMULATOR ... NOW YOU CAN RUN 1000'S OF PC COMPATIBLE SOFTWARE PACKAGES!

Used with GVP's innovative and unique "Mini Slot™" for A530-TURBO and A500-HD8+ users only. The A500-PC/286 emulator features:



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- Optional 80C287 math processor (FPU).

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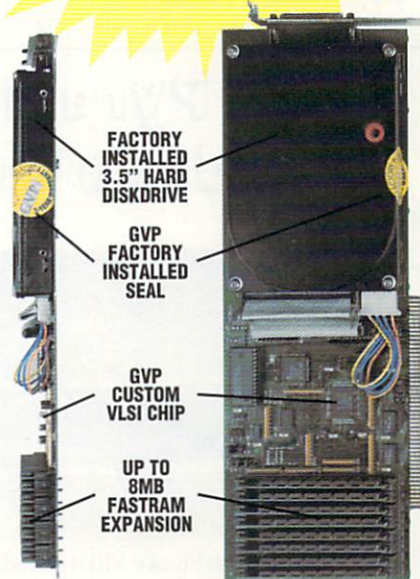
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NEW PRODUCTS

and other neat stuff

and basic rhythm. *Electric Theatre*, 111 Holme Ave. #2, Elkins Park, PA 19117, (215) 379-4538. Inquiry #214

Keys to Music Volume II: Learn to Write Music

Learn to Write Music is the next installment in the series of five volumes. It goes into time signatures, key signatures, and scales. It continues on into actually writing music. *Electric Theatre*, 111 Holme Ave. #2, Elkins Park, PA 19117, (215) 379-4538. Inquiry #215

Legends of Valour

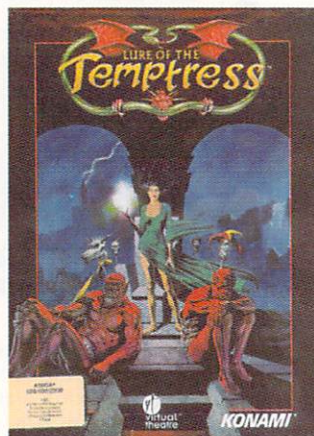
Fantasy becomes reality in *Legends of Valour* (\$59.95), a single-character graphic adventure. Isolated inside the fortified medieval town, players create their own character by choosing their appear-

ance, occupation, and lifestyle. Personality traits such as strength, memory, manipulation, health, and appeal vary with the character's race. After character generation, the player experiences over 45 exciting quests, each with its own mysteries, plot, and potential outcomes. The non-linear game play enables the player to explore the 28 square miles of town in any direction, including numerous shops, taverns, hostels, temples, and guilds. *Strategic Simulations, Inc.*, 675 Almanor Ave., Suite 201, Sunnyvale, CA 94086, (408) 737-6800. Inquiry #216

Lure of the Temptress

The peaceful land of Turnvale has been seized by the enchantress Selena...and so, it seems, have you. Enter the world of *Virtual Theater*, an innovative new graphic adventure system where fantasy becomes reality and characters take on a life of their own. You assume the role of Diermot, an unlikely hero caught up in a web of sorcery and intrigue. Match your wits against the cruel Temptress and

her monstrous creatures, the savage Skorl. Just who is the mysterious Selena—an what is she after? The answer to these questions lie hidden in *Lure of the Temptress*. *Konami Inc.*, 900 Deerfield Parkway, Buffalo Grove, IL 60089-4510. Inquiry #217



MRBackup

MRBackup is a hard disk backup program. It provides a friendly point-and-click user interface with a pleasing 3-D look, is multi-tasking friendly while offering excellent performance and takes advantage of the Amiga's special capabilities. Files can be backed up to: Floppy disk, in AmigaDOS format; Floppy disk, in a special "fast" format; Any sequential file or device (local or networked) in "fast" format; SCSI streaming tape. The purchase price is \$25. Orders must be placed by mail and must include a check or money order. Previous owners of MRBackup Professional can upgrade to the current version by sending their original program diskette plus \$10. The same offer is available to Shareware users. *MRSoftware*, 348 Indian Ave., Portsmouth, RI 02871, (401) 846-7639. Inquiry #218

NFL™ VIDEO PRO™ Football

Lead the league through an entire season, from training camp and pre-season games to the AFC and NFC playoffs, and finally all the way to the Super Bowl using customized playbooks for all 28 league teams. Call plays simulating coaching styles from the past or present, listen to digitized an-

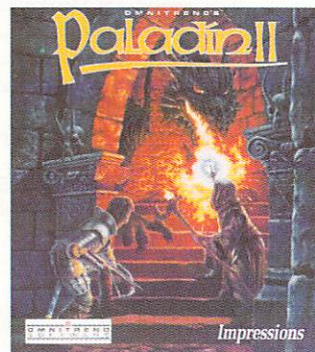
nouncers call the play and watch the action unfold.

Multitasking option allows the user to coach all 28 teams simultaneously, switching from one game to another performing his duties as head coach. Control the game environment, player abilities, and coaching strategies then check the results in the comprehensive newspaper-style statistical review. *Konami Inc.*, 900 Deerfield Parkway, Buffalo Grove, IL 60089-4510, (708) 215-5100. Inquiry #219

PM14400FX Pocket

The PM14400FX combines all the benefits of the latest high-speed modem and fax technologies into an integrated, 4.2-ounce package that fits into the palm of your hand. Using V.42 error control and V.42bis data compression, this tiny V.32bis modem can achieve DTE speeds up to 57,600bps. It also features Group III send/receive fax capabilities and provides high-speed data transmission over common telephone lines.

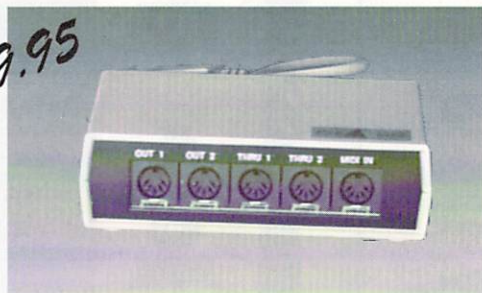
The PM14400FX Pocket includes cable, plug-in wall power cube, battery pack and Quick Link II. Technical support is available; for on-line support call Practical's BBS at 805/496-4445 or PPI Forum on CompuServe. *Practical Peripherals*, 375 Conejo Ridge Ave., Thousand Oaks, CA 91361, (805) 497-4774. Inquiry #220



Paladin II

In the days of legend, Brandon the Young seeks out a chance to win the title of Paladin that he craves. Accepted as an Apprentice in the Order of Paladins, he must earn that title by undertaking quest after perilous quest. Forming a party

Pyramid Midi Interface



The Pyramid MIDI (Eureka MIDI) interface is a full featured MIDI that includes a push button controlled serial pass through and an integral serial cable. Additionally, the Pyramid MIDI comes standard with 1 MIDI Input, 2 MIDI Out and 2 MIDI Through connections. Thus the Pyramid MIDI is more than a MIDI interface, it is a MIDI junction box that makes organizing your MIDI setup a snap!

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- **Morphing must be fast.**

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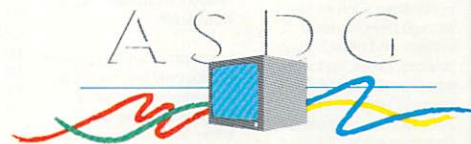
- **Morphing must be high quality**

(so that it truly can be used for cinematic or professional video applications). **MorphPlus**™ is already in use in Hollywood productions, replacing high end systems.

This is what we mean by "cinematic quality morphing."

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of brave warriors, Brandon and his allies will encounter all manner of foe in castles, open fields, and dungeons deep in the earth. Only by proving his bravery and skill will he be able to claim the exalted rank as his own. *Impressions Software*, 7 Melrose Drive, Farmington, CT 06032, (203) 676-9002. Inquiry #221

PRO-60 #2

Texture City is pleased to announce the release of a new professional image library set, PRO-60 #2 (\$199.95). It includes full overscan 752 x 480 24-bit images, ideally suited for video work and texture mapping. Textures include animal skins to scenics, quarry

marble to metals, hand-blown glass to special effects, and more. *Texture City*, 3203 Overland Ave., # 6157, Los Angeles, CA 90034, (310) 836-9224. Inquiry #222



Rock Through MIDI

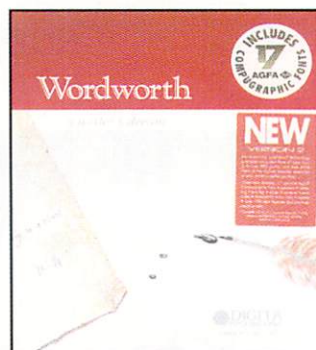
Rock Through MIDI (\$39.95) is a fantastic new program for all musicians who want to develop a style for playing rock keyboards. This unique instruction method analyzes over 65 classic keyboard riffs. Each sequence uses drums, piano, and bass. Leadsheets are also provided with note for note transcriptions of all of the rock riffs and

solos. Program requires a MIDI keyboard and sequencer. *New Sound Music*, P.O. Box 37363, Oak Park, MI 48237, (313) 355-3643. Inquiry #223

Soundtracks for MIDI

Soundtracks for MIDI (\$49.95) is a collection of multitrack MIDI sequences that can be used as background music for multimedia presentations, film, TV, video, and radio. Everything from string quartets to electronic and contemporary dramatic tracks are provided. All of the compositions in Soundtracks for MIDI are original works and the user is granted full rights and permission to use any of the sequences in any way they wish. *New Sound Music*, P.O. Box 37363, Oak Park, MI 48237, (313) 355-3643. Inquiry #224

Mailmerge, and more. Requires 1.5MB min, Workbench 1.3/2.0. *Digitia International Ltd.*, Black Horse House, Exmouth Devon, EX8 1JL England, 011-44-395-270-273. Inquiry #226



•Books•

The Desktop Studio: Multimedia with the Amiga

This book (\$21.95) provides a comprehensive assessment of the Amiga computer and its place in the field of multimedia. It describes the different models and their capabilities, professional uses, an in-depth look at graphic options including tutorials, descriptions and explanations of hardware options, and helpful recommendations for the creation of professional studio graphics presentations. *Wordware Publishing, Inc.*, 1506 Capital Ave., Plano, TX 75074, (214) 423-0090. Inquiry #227

The Official Book of King's Quest, Third Edition

Finally, Questers will find all they need to know to find the magic treasures, escape the wicked wizard Manannan, and rescue the royal family of Davenport. Inside, readers will find complete maps for all six King's Quest adventures; hints, tips, and strategies found nowhere else; the latest information about CD-ROM versions of King's Quest, and more. The Official Book of King's Quest, Third Edition retails for \$16.95. *Bob Adams, Inc.*, 260 Center Street, Holbrook, MA 02343, (800) 872-5627 or (617) 767-8100. Inquiry #228

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Do you want to share files with your Amigas plus PCs and Macs? Share peripherals such as large storage devices, laser printers and other output devices, faxes, and video equipment? Easily manage large files? Access your computer and files from home or work? Restrict file access or quickly backup large files? Then we have the connection you need.

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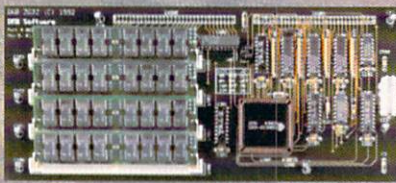
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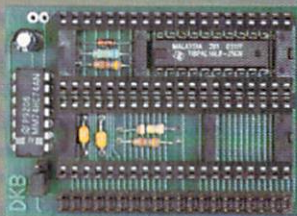
- Now you can go beyond 4 Megabytes of 32 Bit memory.
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MultiStart II™

For the A500, A600 & A2000

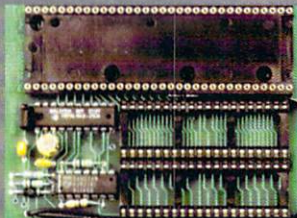
Allows A500 A600 and A2000 owners to install Kickstart V2.0 and V1.3 ROMs and switch between them with the keyboard. No software required for operation. Lets you stay compatible with your software. No external wires or switches required. This MultiStart is compatible with the MegAChip 2000/500, VXL030, and CSA MMR accelerators for the A500 and also most other products that install inside the A500. This is the ROM switcher that Commodore Amiga Technical Support sells to developers.



KwikStart II™

Use Kickstart 2.0 in your Amiga A1000

Allows A1000 owners to install V1.3 and V2.0 Kickstart™ ROMs and switch between them. Upgrade to the latest operating system and still be compatible with software that requires Kickstart V1.3. Use the latest V2.0 operating system without using up your system memory. Fully compatible with Kickstart V2.0 and Workbench V2.0. Uses standard Commodore ROMs for easy upgrades. Allows you to boot faster because you only need to load Workbench. Works with Kickstart V2.0, V1.3, and V1.2. Compatible with the Insider memory expansion boards. Also compatible with most processor accelerators. Keyboard switchable between two ROMs or between one ROM and disk based Kickstart. No external wires or switches required.



MegAChip 2000/500™

2 Megabytes of Chip RAM for the Amiga A2000, A500, CDTV & Video Toaster

"The MegAChip 2000/500 should be standard equipment on every Video Toaster System."

Jim Plant - Publisher/Editor Video Toaster User

"The MegAChip 2000/500 is a must own for anyone that wants to use Toaster Paint™ or Multitask with the Video Toaster."

Lee Stranahan - Writer of the Video Toaster 2.0

manual Tutorials also featured in the Desktop Images Video Toaster Tutorial tapes.

"I would advise Toaster users who make use of Toaster Paint or LightWave™ to add DKB's MegAChip 2000/500 to your system as soon as possible."

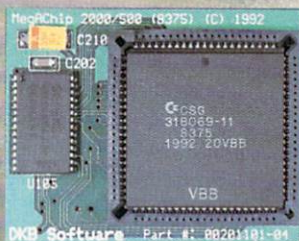
Tim Doherty - Video Toaster User

The MegAChip 2000/500 allows you to upgrade your Video Toaster, Amiga A2000, A500, and CDTV™ to 2 Megabytes of Graphics Memory.

The MegAChip 2000/500 is a needed addition to your system if you are working with Desktop Video, 3D Rendering & Animation, 24-Bit Paint, Multimedia or Desktop Publishing. Scala MultiMedia 200 requires 2MB of Chip RAM which means an A500 or A2000 needs a MegAChip 2000/500 installed to use this software.

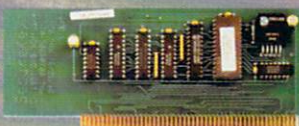
Fully compatible with the Video Toaster™, OpalVision™, VLab™, IV-24™, DCTV™, Ham-E™, and most genlocks and framebuffers.

Fully compatible with most 68030 and 68040 accelerator cards.



SecureKey™

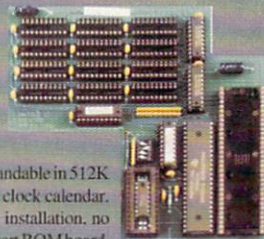
Access Control System For The A2000 & A3000



The SecureKey is a hardware security device that installs in any A2000 or A3000 or Video Toaster system. The SecureKey allows you to have one access code for your Amiga. The SecureKey will not allow access to your Amiga without the right security code, period. You can't boot off of a floppy or bypass it in any manner. If you need to keep your system safe from unauthorized use - Want to make sure that no one can delete files from your harddrive or steal your work then you need the SecureKey. This means that if your system has files such as animations, documents, presentations, C code, or any type of confidential information, you can be assured that the files on your harddrive are safe. Keep your Amiga safe from those that may otherwise unknowingly destroy your information. Requires Kickstart V1.3 or above. The SecureKey is fully compatible with Kickstart V2.0.

Insider II™

1.5 Meg in the A1000



From the maker of the first internal RAM board for the Amiga 1000: the original Insider™ by DKB Software. Allows A1000 owners to add up to 1.5 Megs of Fast RAM internally. User expandable in 512K increments using 256K x 4 DRAMs. Includes battery-backed clock/calendar. Comes with software for the clock and testing RAM. Simple installation, no soldering required. The Insider II is compatible with the KwikStart ROM board. Also compatible with most processor accelerators.

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Mastering Toaster Technology is a 256-page, step-by-step guide to toaster system design, 3-D logo creation, rotoscoping, and is a pricing reference for you services. Positron Publishing, 1125 South 119th St., Omaha, NE 68144, (402) 339-1001. Inquiry #229

•Other Neat Stuff•

Amiga DevCon'93

The next DevCon will be held in

Orlando, Florida from January 26-30, 1993. DevCon Orlando will include Amiga developers from around the world. This will be a unique opportunity to network with Amiga developers worldwide. CATS-DevCon, 1200 Wilson Drive, West Chester, PA 19380, Fax: (215) 429-0643. Inquiry #230

ASDG Adds Support

ASDG adds support for new EPSON color scanners to its Art Department Professional family. Building upon its best selling support for the ES-3000C, ASDG's new driver takes full advantage of the greater speed, resolution, and options offered by the new ES-600C and ES-800C scanners. The suggested price of ASDG's EPSON scanner driver remains unchanged at \$200. Additional options include an automatic document feeder and the ability to scan transparencies up to 5 inches square in size. ASDG, Inc., 925 Stewart Street, Madison, WI 53713, (608) 273-6585. Inquiry #231

Bit.Movie'93

Bit.Movie'93 is an annual international contest for real time animation and artworks on personal computer. Every competitor can enter animations and static images made on personal computer. The animations must be in real time (not recorded on video). The animations and the static images will be subdivided into two sections: 2D and 3D. Deadlines for all artworks is March 10, 1993. For entry forms and regulations contact the following address. Bit.Movie'93, c/o Carlo Mainardi, via Bologna n.13, 47036 Riccione (Italy), (0) 541-646635, Fax (xxx39). Inquiry #232

Bit.Sound'93

International contest for real time music composition and arrangement on personal computer. Every competitor can participate with works made on personal computer in real time (not recorded on magnetic tape).

Every competitor can enter 2 pieces as maximum number, and the length of the piece must be no more than 3 minutes.

Deadline for reception of all artworks is March 10, 1993. For entry forms and regulations contact the following address. For information write to the following address. LUCA VILLANI, via Ariete 20/b, 47037 RIMINI (ITALY). Inquiry #233

Blue Ribbon Soundworks Ltd.

Blue Ribbon Soundworks has a new address, telephone number, and fax number. Blue Ribbon Soundworks Ltd., Venture Center, 1605 Chantilly Drive, Suite 200, Atlanta, GA 30324, (404) 315-0212, fax (404) 315-0213. Inquiry #234

Contest Results

The "Commodore Amiga 4000 Reasons Contest" is now over. The grand prize winner was Eugene T. Cottle. Reason: "Since it was first introduced, the Amiga has been a pioneer. While IBM users anticipate the next innovation, Amiga owners are already using it." Eugene has won an Amiga 4000 System (with 1960 Monitor). Commo-

dore Business Machines, Inc., 1200 Wilson Drive, West Chester, PA 19380, (215) 431-9100. Inquiry #238

Electronic Bulletin Board Service

Interplay Productions, in an effort to enhance its customer support services, announced it will maintain an electronic bulletin board system for its customers. This bulletin board service will allow customers to quickly access product hints, upgrades, product demonstrations, and technical support. It can be reached by calling (714) 252-2822. The modem operating parameters are 300-14.4 baud and 8N1 supporting v.32bis and v.42bis. Lines are open 24 hours a day. Interplay Productions, 3710 S Susan, #100, Santa Ana, CA 92704, (714) 545-9001. Inquiry #235

Interplay and Virgin Sign Key OEM Agreement

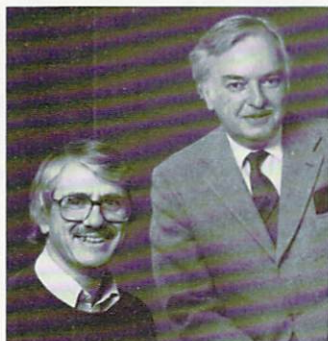
Interplay Productions, Inc. announced today it has signed a key OEM contract with Virgin Games, Inc. giving Interplay exclusive rights to bundle all Virgin Games' titles on all software formats. This agreement enables Interplay to enter the OEM market with its own titles, affiliate offerings from Cineplay Interactive, Inc. and MicroSports, Inc. and such Virgin Game titles as Monopoly Deluxe™, Scrabble Deluxe™, and Dune™. Interplay Productions, Inc., 17922 Fitch Ave., Irvine, CA 92714, (714) 553-6655. Inquiry #236

Mouse Trap

Mouse Trap, the world's first dedicated Amiga radio show, is set to debut Tuesday, December 15, 1992. The show will be broadcast on Euronet, the satellite radio channel located on Astra Transponder 20 on the 7.56MHz audio frequency. It will be transmitted at 9:30am and repeated at 5:30pm and 1:30am. Music View Limited, P.O. Box 117, Bracknell, Berkshire RG12 7WN, Tel: 0344-860540. Inquiry #237

•AC•

New Products and Other Neat Stuff is compiled by Elizabeth Harris.



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REVIEWS

HotLinks Editions 1.1

by Merrill Callaway

Soft-Logik upgrades *HotLinks* to version 1.1, and *PageStream* 2.2HL to version 2.21. Several new features and improvements are included in the package.

Soft-Logik integrates your *PageStream* DTP environment with the *HotLinks* Editions software. There are three programs: A text editor, called *PageLiner*, *HotLinks* (for data exchange), and *BME* (for bit map editing). The *HotLinks* program establishes real-time linkages between *PageStream* and *PageLiner*, or *BME* (to retouch IFF bitmaps). Changes in one environment will be reflected automatically in the other; preserving all your tags and text attributes, or image updates. The changes only reflect in the other program if *HotLinks* is running, and you may "kill" links to prevent linkages from messing up certain kinds of edits. The concept is powerful, but not foolproof, and if you do not follow the correct sequence of things, you can ruin hours of work, not because the program is necessarily buggy, but because the links themselves can create many "Gotchas!" The trade off is that you may edit your *PageStream* documents in an easy to read

and fast text editor environment; and you only have to change one picture to change all occurrences of it in a document with these pictures linked by *HotLinks* to the *BME*.

Overall Changes

There are several user-transparent changes to the programs to improve speed and compatibility. Briefly, there are important additions to *PageLiner* to make it a better editor, and a major upgrade to *BME* to include an auto-trace function to make structured bitmaps out of IFF pictures. *PageStream* goes up to version 2.21, the only noticeable change being a new menu item to "break link" in the Edit section. Other programs may use "shift-publish" as the method to break a link. *PageLiner* and *BME* don't need to break links as they cannot incorporate multiple editions in one file. The new interfaces are compatible with System 3.0.

HotLinks 1.1 Changes

The Subscribe requester has a size gadget to see more editions. There are also new Publish and Information requesters that use a "pop up menu" gadget to put seldom used options out of sight until you need them. From *HotLinks*, you may look at "Name & Description," "Access,"

and "Information" windows, which tell you everything from when the last time you updated the file, to who has access to the edition file. The rest of the changes to *HotLinks* are transparent to the user. Editions created under *HotLinks* version 1.0 will continue to work in version 1.1.

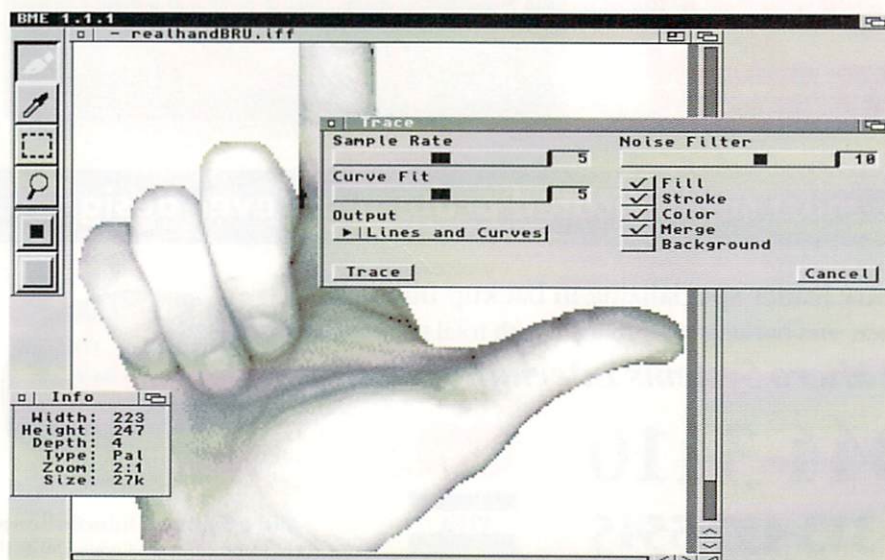
PageLiner 1.1.1 Changes

You no longer need to look up a lot of tooltypes to insert in the icon or use command line options in the CLI, as there is a complete "settings" menu and settings may be loaded and saved. You may show invisibles (spaces and end of lines) or not; change eight screen colors in the user interface; set options such as cursor width, flash rate, margins, symbols to use for invisibles, window position; set paths for files such as dictionaries and fonts; and program function keys for insertion of "Text" at the cursor; or to set a "Font" or apply a "Tag" to selections.

You can now load *PageStream* 2.2, 2.2HL, and 2.21 font lists from *PageLiner* to apply fonts and styles to text. A requester similar to *PageStream*'s lets you set font and style and size. You may load tags or set tags but not create tags in *PageLiner*. Pressing the "Help" key brings up tech support numbers at Soft-Logik as well as information about the program. *PageLiner* has full Spell Check and Lookup facilities, complete with a user defined dictionary, but you still cannot use the dictionary from *PageStream*! There is a standard default file to save settings. You may also "Save As" to create custom settings for certain documents. The rest of the changes are user transparent.

BME 1.1 Changes

You may now open TIFF files in addition to IFF ILBM and GIF picture files. New palette pictures now have a grayscale palette instead of all black palettes. The brush color requester has been redesigned. The "Help" key brings up tech support telephone numbers. A tooltype to set the font and size for the *BME* interface is new. The most important change is the new



autotrace feature to turn bit maps into structured drawings.

Autotrace

Autotrace is the main reason to get the new HotLinks Editions 1.1. In BME's Area menu is a Trace... command which you may use to turn an IFF bitmap into an IFF DR2D structured drawing. Structured drawings take up less file space, and do not contain the "jaggies" so prevalent in bitmapped pictures. A structured drawing is really a mathematical "formula" that tells the computer how to draw the image. This drawing may be resized without loss of detail. Although you may trace any picture you can open in BME up to 24-bit images, there are certain constraints that you must obey or the results will be disappointing or take forever to trace. In general, using only a few colors makes the most effective traces.

If you define an area with the BME menu, that is the area that will be traced. If no area is selected, then the entire image will get traced. You must specify the background color in order to trace properly. All colors except color zero (BME sets the background color to color 0) will get traced. It is left to the user to insure that the image has the proper color zero, as paint programs allow any color to be the background color. You may use the paint program or *Art Department Professional* to set or rearrange the background color; or you may do it within BME using the brush color tool or the eyedropper tool. If you want to trace the background color with BME's trace function, then you may set the background option in the Trace requester.

Trace Options

Sample Rate: This option allows you to select how much picture information will be used for tracing. The slider is relative and goes from 0 to 10. Zero traces every pixel, and 10 traces the fewest pixels.

Curve Fit: This determines "goodness of fit" of the curves drawn by the trace algorithm. Again it is a relative gadget going from 0 to 10, where 0 makes the curve fit the best and 10 approximates the most, and is least faithful to the original picture. A setting towards 10 will "smooth" a curve more, however, and ignore small wiggles in the edge boundaries of the picture. Soft-Logik claims an intermediate setting works best for "Curve Fit." All the requesters "wake up" in default "average" settings.

Noise Filter: This option strains out stray pixels or noise from the trace operation. On a scale of 0 to 15, 15 ignores large amounts of noise (clusters of pixels); and 0 is sensitive to every pixel (it will trace all pixels—essentially turning off the noise option). The numbers correspond to one larger than the pixel cluster size, because they deal with outlines of clusters. For instance, a 2 by 2 or 4 pixel cluster will get ignored by a Noise Filter setting of 5 or above.

Output: You may set Curves Only, Curves and Lines, or Lines Only. This allows you to eliminate using Bezier curves if you don't need or want them, as in a straight line blueprint. The default is Curves and Lines, which fits most pictures the best.

Fill: Fills traced objects when "on"; "off" merely outlines them.

Stroke: This makes the outline or no outline. Turning off both Fill and Stroke will make an invisible picture!

Color: Saves the object in color or in B/W.

Merge: Merges traced paths of the same color. They suggest not using this one on complicated pictures.

Background: To trace or not trace color zero.

It is normal for traces to take some time to finish. You get to watch the small gray scale picture as the trace completes in green on top of it. The manual addendum

lists a few tips and cautions about tracing. With some practice, I made some interesting drawings of bitmapped images.

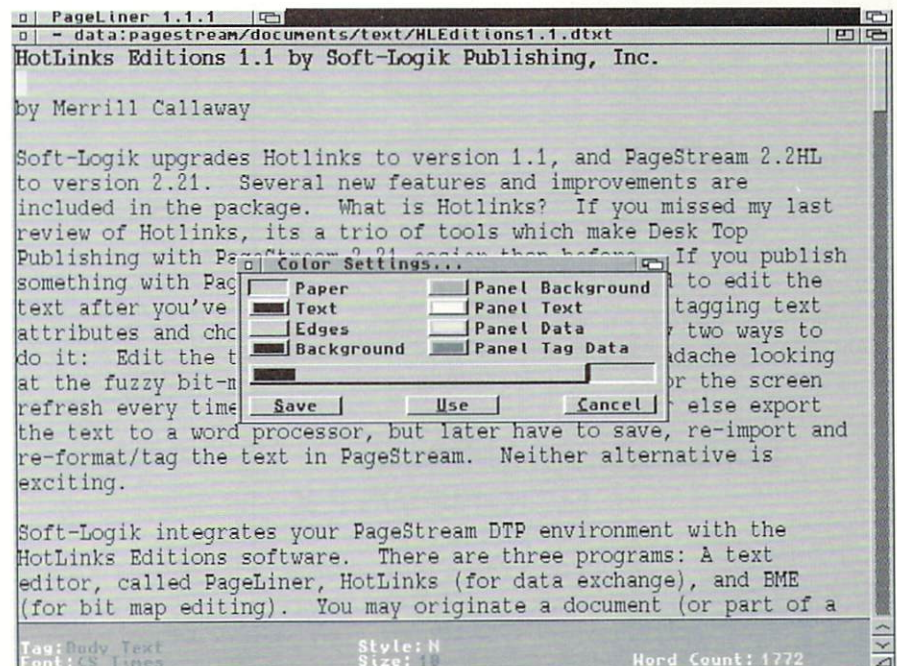
Conclusions

HotLinks 1.1 is an important upgrade to the DTP environment on the Amiga and to PageStream 2.21. There are still too many ways to get into trouble, however. I would like to see more "idiot proofing" in the way of warning requesters (which may be turned off if you wish), telling you what is about to happen if you say OK. I think there are still a few bugs in as well. I looked up PageLiner with this very article several times when working only from its edition. Once I "saved" the article as a DTX file, the problem went away. That seems like a bug.

The settings menu in PageLiner is welcome. So is the autotrace function. Unfortunately, the autotrace does not have enough "smoothing" to avoid tracing those "jaggies" it's supposed to eliminate. At the "crude" settings it lops off curves with straight lines and at "fine" settings, it traces every stairstep jaggie in the bit map! It's difficult to impossible to get a commercial grade structured drawing out of Trace. The algorithm really suffers compared to the state of the art in bitmap tracing.

HotLinks takes the right direction but it's far from finished.

HotLinks 1.1
Soft-Logik Publishing Corporation
11131 S. Towne Sq. Ste F
St. Louis, MO 63123
(314) 894-8698
Inquiry #200



REVIEWS

RockKey and RocGen Plus

by Frank McMahon

RocTec Electronics, who have come up with numerous Amiga peripherals such as disk drives and mice, present a solution for video users in the combination of *RockKey* and *RocGen Plus*. *RocGen Plus* is a good quality, mid-priced genlock that is a step above RocTec's standard *RocGen* unit. *RockKey* is a true chroma-key unit that allows keying out a certain color and filling it with video or graphics. *RockKey* works together with *RocGen* to provide many of the common video users most used keying effects.

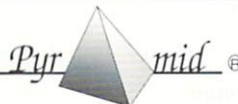
First, let's take a look at the *RocGen Plus* genlock. The unit is a separate component and is not an internal board. This allows it to work on any Amiga (500, 1000, 2000, 3000) as well as with CDTV. The medium-sized housing (220mm x 141mm x 38mm) has inputs for composite video and an external keying signal as well as outputs

for composite video, video-thru, and Amiga RGB-thru. Installation is simple; merely plug the RGB cable from the *RocGen Plus* unit to the back of your Amiga and plug your Amiga monitor into the back of the *RocGen Plus*. Then run a stable video source in, and a record RCA cable out. The manual rightly warns that even though the signal need not be time-based corrected—although that's not a bad idea—it should be stable with a strong consistent sync signal. Most masters of any format provide a stable sync; however, running dubs or third-generation video though the genlock could lead to problems. The front of the unit features two easily accessible knobs, one for fading in and out the Amiga graphics signal and another for doing the same with the video signal. There is an included disk that contains a few demonstration programs to get you rolling. The manual does a great job of explaining what a genlock does as well as the process of mixing graphics and video. One nice feature is that the *RocGen Plus* has its own dedicated power supply and does not need to get power from the Amiga. As far as specs go, the unit has a luminance band width of 5MHz (3dB), a video signal rating of 1 Vp-p and its keying input is TTL-compatible.

most widely used in professional atmospheres because it is more reliable. Luma key—also used by New Tek's Video Toaster—is far less accurate and is usually takes quite a bit more with working with lights to get acceptable results. *RockKey* does many other various keying effects such as mixing video in between keying signals. These techniques are explained in full detail in the included video tape. The video tape is a little on the amateur side; it recommends fluorescent lights as the best for shoots using keying, an approach that I would quickly debate. However, it does do a great job of demystifying the setup and possibilities that the unit has to offer. The tape does provide examples as well as tips, and all effects on the tape were produced using the two units. The *RockKey* can work with most genlocks and is specifically designed to work with the *RocGen Plus* genlock.

How do the units work? Well they both work flawlessly as advertised; however, I am a little hesitant to recommend them to anyone but home users. I found the composite output of the *RocGen Plus* genlock not quite as sharp as I would have expected. Also, the color phase was slightly shifted in the test unit I had, making the output a little off from the original. Of course it is a low-cost genlock and I am surely spoiled by the Video Toaster. So although I may be a little stricter in defining minimum resolution quality, I can say that it would be great for someone with a home studio but not really suited for cable or TV stations. The *RockKey* is a much better value, showing how much advancement has occurred in Amiga keying. Since it can do true chroma key, it outdoes the Toaster for sheer versatility. The signal was adequate but again, I had tested it with the *RocGen Plus* so it could be that image quality could be improved with a high-end genlock. The keying itself was very smooth; I did not experience the jitter and edge distortion of other keyers I have reviewed. It does take quite a bit of light experimentation to get acceptable results, however. The included videotape goes a long way, visually describing what all the various keying effects do and what their uses are for. Generally, the units perform as advertised and make a great addition to any home studio.

While the *RocGen Plus* does a great job of mixing graphics and video with smooth fading controls, the real power kicks in when you add the *RockKey* keying unit. Nicely matched with the *RocGen Plus* as far as components go, *RockKey* will do chroma key and luma key, and act also as a color splitter. The difference between chroma key and luma key is that the chroma method keys out a specific color—one can select any color with this unit, a handy feature—while with luma you key out based only on the brightness of the object. Chroma key and variations of it are



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P.F.M. Plus

by Rick Broida

Finding the best way to manage my finances has long eluded me, hence the reason why my finances are currently receiving no management whatsoever. Therefore, I was pleased with the assignment of reviewing *P.F.M. Plus*, Michtron's personal finance management software, as I thought introducing my computer into the confusing world of checkbook balancing might finally help me organize my pecuniary bedlam.

No such luck. *P.F.M. Plus*, like a movie with great actors but a terrible script, has a wealth of features but poor documentation. Where matters of money are concerned, that's a big thumbs-down.

The software, which is easily installed on a hard drive, comes on two disks, a version for Workbench 1.3 and one for 2.0. This admirable fact was overshadowed by a read/write error on the Workbench 2.0 disk, which made it uninstalleable. Luckily, the 1.3 disk worked fine, using a drag-and-drop installation method: icons from the original disk are dragged, or copied, into an empty drawer on one's hard drive. *P.F.M. Plus* loads quickly from disk or hard drive and multitasks well.

Taken at face value, *P.F.M. Plus* offers a lot of functionality. Up to ten separate accounts can be managed in one file, so you can track various credit cards and bank accounts and then generate a graph displaying spending trends. Pie and bar

charts are also available to help you see how much money is going where.

P.F.M. Plus will also post transactions from one account to another, plus automatically balance accounts against bank-issued statements.

But for all *P.F.M. Plus* is able to do, I daresay only a banking expert would have the knowledge necessary to make use of the software. For instance, the *P.F.M. Plus* packaging and documentation tout the fact that the software handles automatic standing orders. Nowhere have I been able to find out what a standing order is or why I'd want one handled automatically. I'm a money management novice, so I was lost with some of *P.F.M. Plus*'s options.

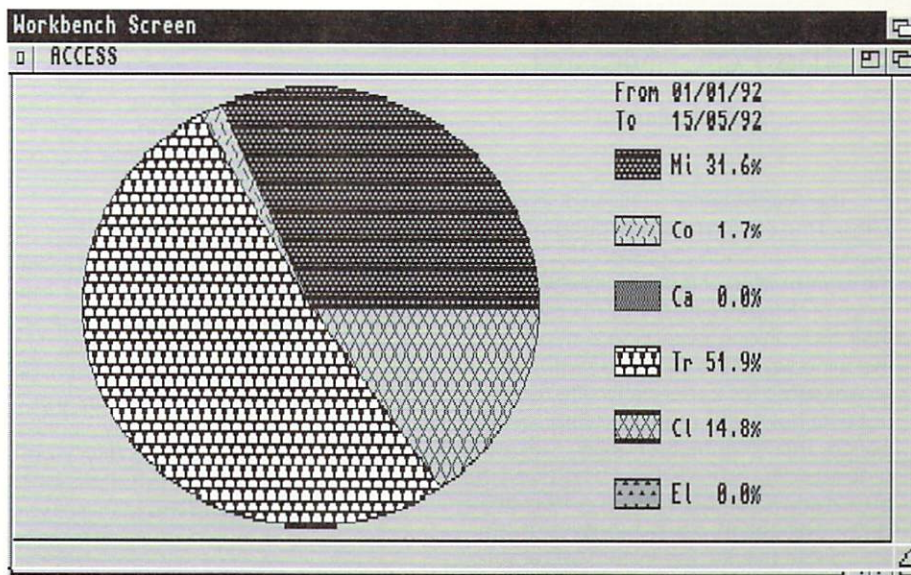
Credit for this confusion goes to the poorly written and ill-organized documentation. The manual reveals only the me-

chanics of operating the software. Another irony is that while on-line help is, commendably, built into the software, it is cursory at best, covering such perfunctory topics as how to open a new file. But perhaps *P.F.M. Plus*'s largest flaw is its origin. This British import didn't translate well into American, as the date entries are ordered day/month/year. Hence 12/10/92, as far as the software is concerned, is October 12, 1992, not December 10, 1992. Getting used to this was virtually impossible, and forgetting just once could easily skew a file full of transactions. Moreover, the software doesn't allow the use of commas in entering dollar amounts; granted, it adds them automatically, but why should it balk at a comma?

Where *P.F.M. Plus* is concerned, I must break the be-kind-or-silent rule. Software like this not only wastes one's time and money, it also hurts the Amiga. I'd love to see one of the powerful IBM finance managers, like Intuit's *Quicken*, hit the Amiga shelves.

Until then, look elsewhere for money-management software. I don't know what the Plus in *P.F.M. Plus* stands for, but it'll produce one irritating Minus in your checkbook.

P.F.M. Plus
Michtron/Microdeal
3285 Lapeer Road West
Auburn Hills, MI 48057
313/377-8898
Inquiry #204



Workbench Screen					
Account : ACCESS					
Date	Description	Debit	Credit	BC	Balance
01/01/92	Opening balance				0.00
02/01/92	Petrol	21.96		Tr	-21.96
04/01/92	Shirts	74.97		Cl	-96.93
09/01/92	Petrol	19.56		Tr	-116.49
10/01/92	Films	12.75		Hi	-129.24
12/01/92	Shoes	25.99		Cl	-155.23
14/01/92	Access payment		155.23	Cr	0.00
16/01/92	Petrol	23.46		Tr	-23.46
23/01/92	Petrol	18.47		Tr	-41.93
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15/02/92	Access payment		110.87	Cr	0.00
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The PatchMeister

by Rick Manasa

The *PatchMeister* a universal librarian, without the editing features found in similar products from SoundQuest and Dr. T. Given the current state of the industry—with hundreds of different kinds of synths, most with their own unique operating system—and the mind set of the average synth user, it makes sense for someone to offer a product that helps you organize synth sounds, period. The *PatchMeister* doesn't replace a good editor, but for those who don't do an extensive amount of sound creation and modification, a universal librarian/editor can be overkill. The *PatchMeister* satisfies the need of the synth user who only wants to organize sounds and SysEx info from their MIDI setup and send this data to and from their synth setup, all at a very reasonable price.

The *PatchMeister* comes on one, non-copy protected disk and is hard drive installable with the included hard disk install program. While the disk is not copy protected, the install program asks you to input your name and serial number during installation. The program then writes this information to the source and destination disk. Your copy of The *PatchMeister* will copy this information to any backup copy you make. This is a form of copy protection, but one that I can live with. It doesn't interfere with the operation of the program and makes it unlikely that copies of The *PatchMeister* registered in this fashion will be passed around.

Blue Ribbon has always gone to great lengths to make their manuals easy to read and understand, without talking down to the reader. The manual for The *PatchMeister* is no exception. It is well indexed, laid out in an orderly fashion and is graphically pleasing to the eye.

What Makes a PatchMeister?

The *PatchMeister* is made up of seven basic components. Drivers are files that contain information specific to any given piece of MIDI equipment. The things that make a Roland U220 different from an Ensoniq SQ-R are contained in each instrument's Driver. As with any vehicle, without a Driver, you can't go anywhere.

Libraries are files that The *PatchMeister* creates to keep track of the MIDI files you are saving and organizing. Think of them as automatically created directories and indices of what is on the disk. While Libraries are Driver specific, they may contain any kind of data pertaining to a particular piece of MIDI gear. This could be sounds, global settings, tuning tables, etc.

Banks are collections of one type of MIDI data for a particular synth. The DX-7 has Sound banks of 32 sounds each and Function banks that describe different control parameters for the synth. A DX-7 Function bank would be saved as one Bank in The *PatchMeister* and a Sound bank as another Bank. Banks can be accessed directly from the synth. Once saved, The *PatchMeister* displays Banks in that instrument's Library. Any file that cannot be defined as a Bank is referred to as a SysEx file. This would be any individual file, like a single sound file, a program map, etc. These are accessed the same way as Banks.

A Snapshot is a picture of your current MIDI setup. All Banks, and SysEx files that are resident in your MIDI equipment at a given moment are stored in a Snapshot. This can be helpful when it's time to recreate that glorious combination of voices you stumbled across at three in the morning. A Setup is slightly different. Where a Snapshot captures the moment, a Setup lets you assemble a set of previously stored files into one file and save it for later use. You can then send one file instead of several smaller files to recreate your favorite daily work environment.

A Capture file is a catch-all feature that stores whatever data is sent to The *PatchMeister* from your MIDI equipment. There isn't much you can do with a Capture file but get it, store it, and send it. But if you don't have a Driver for a particular piece of equipment, being able to Capture a file can be a welcome alternative to creating one.

Give That Man a Blue Ribbon

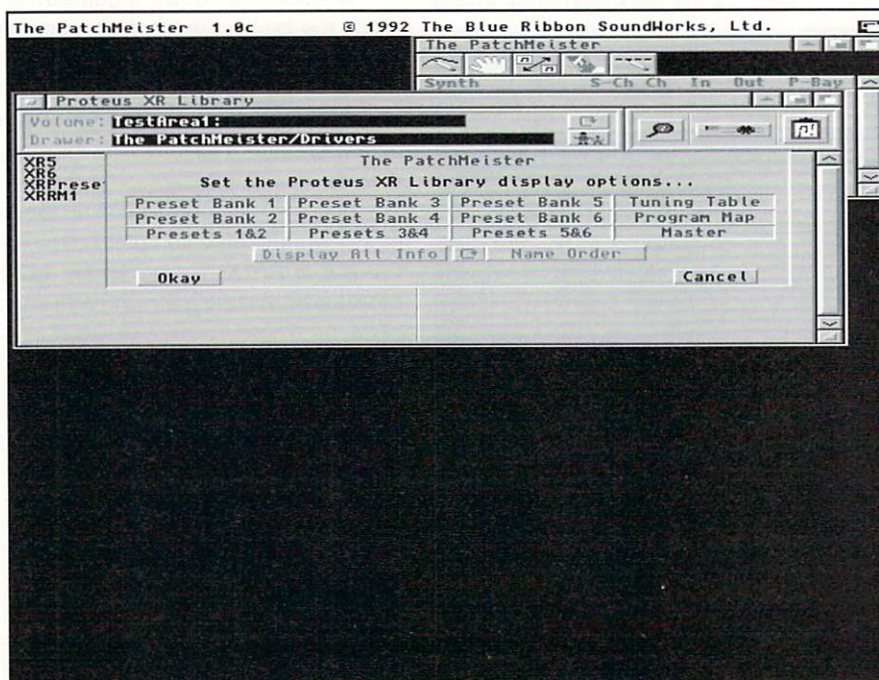
The concept, design, and layout of The *PatchMeister* will be familiar to users of other Blue Ribbon music products. You can seamlessly integrate The *PatchMeister* into *Bars & Pipes Professional* or *SuperJAM!* as an Accessory, making it easy to load and save patches and MIDI setups from a centralized working environment. You won't have to run The *PatchMeister* separately to get at your sounds and MIDI data. As with the other members of the Blue Ribbon family, you'll find a lot of creative computing power beneath the surface of riotous colors and cutesy icons.

Help When You Need It

Without question, the finest feature of The *PatchMeister* is the innovative on-line Help feature. This monkey is way too cool. Every developer on the planet should be locked in a room for a day with a novice, The *PatchMeister*, and no instructions for the program except how to use the Help feature. Simply hit the Help key, choose a menu item, hit a key, point to an icon or an area of the screen, and Presto! up pops a window providing an explanation of the action in question. No more sticky notes, highlighter underlining, or dog-eared manual pages.

This Way to the Audition

Auditioning sounds in Banks is handled in two ways with The *PatchMeister*. You can use the Qwerty keyboard or select Auto Audition from the Settings menu. The *PatchMeister* divides the Qwerty keyboard into two setups. Each of these setups can be assigned different velocity and octaves by hitting different keys on the numeric keypad. 0-9 represent different volume levels, while (SHIFT) 0-9 changes the oc-



taves. This can be helpful if you're working with different synths or different kinds of sounds, whose relative volume and pitch may be appropriate in the context of the sound, but are hard to hear when playing single notes to audition sounds. The changes that The PatchMeister allows with these features does not affect the sound stored in your synth, only the way you hear it while using The PatchMeister.

The other way to hear your sounds is by using Auto Audition, in the Settings menu. When selected, The PatchMeister will play a four-note arpeggio whenever you click on a sound in a Bank using the To Synth button. This is quicker than clicking on a sound and then hitting the Qwerty keyboard, but you don't have as much flexibility in determining pitch and volume set-

and build Banks. This makes it easy to group or locate all of your string or bass sounds across Banks. Just set the search key for each of your bass sounds to "Bass," your string sounds to "Strings," etc., and you'll never have to wonder what your "Mad Funk Master" or "Double Dip Sundae" patch is supposed to be.

Snapshot

If you have more than one MIDI device in your rig, you'd probably like a way to save the current settings of all your synths in one file occasionally. This would be useful if you use a particular set of sounds and settings across your system for your default setup, or if you've designed a set of sounds on your synths for a new song. Rather than labeling and saving each synth configura-

Capture the Moment

Some synths were designed in the misty beginnings of MIDI, where standards were less than standard and cowboy engineering ruled the plains. Some companies employed quirky implementations of the developing MIDI standard for their products, rather than wait for all the wrinkles in the proposed standard to be ironed out. For those of us with well loved but non-standard or ancient pieces of equipment, or for those with the latest whiz-bang boxes, The PatchMeister offers two solutions: write your own Driver (more on that later) or Capture the files.

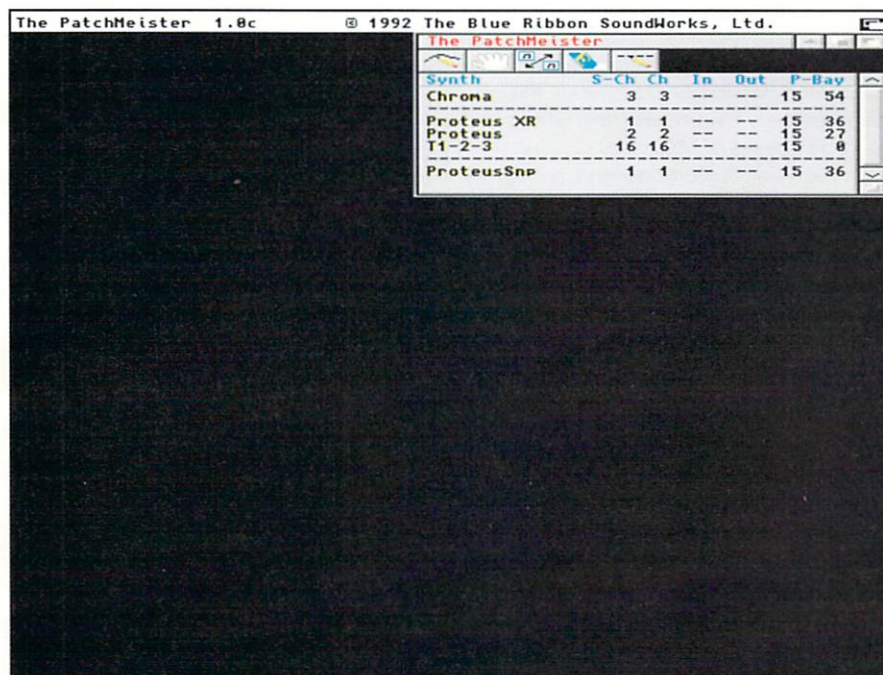
Because Capture files don't rely on Drivers, you can collect any data that a synth is capable of sending. While this sounds great, there are a couple of hitches. First, your synth must be capable of sending a bulk data dump without any help from The PatchMeister. Second, while Capture files can hold Banks of data, you won't be able to edit the individual data. A Capture file is like a large SysEx file in this regard. As with the other windows in The PatchMeister, you can attach notes and search keys to Capture files. Capture files are the "when all else fails..." court of last resort, as well as a quick and dirty way to save and send info on the fly. There's nothing to stop you from Capturing a bulk dump in the heat of the moment and saving it for re-transmission to The PatchMeister later for storage into Banks and SysEx files when you have the time and Drivers to do it.

Support Your Local Librarian

Libraries provide information about files in The PatchMeister and help with general housekeeping. You can decide which types of files, what kind of information and in what order those files will be displayed. The PatchMeister will search for files based on file names and search keys you define, rebuild the library directory, delete files, print a library, examine each file's MIDI Route and change the Library's MIDI Route. The Clipboard button in the Library window is used to build Banks based on search keys. Enter the search key and The PatchMeister will build a new Bank of files that have the same search key.

You Can Do It

It is a tribute to The PatchMeister and its designer Annette Crowley that I was able to successfully create a functioning Driver under these circumstances. All I had was the bulk dump request code and a few other pieces of information about the Syntech interface. I spent an evening wrestling most of the Driver into shape, and spoke with Annette the next day to tie up some loose ends. I can now get, send, and audition banks of sounds as well as get and



tings. The PatchMeister will always Auto Audition in the octave assigned to the Qwerty key setup at a velocity level of 64.

A Trip to the Bank

As mentioned earlier, The PatchMeister stores sounds in Banks. Banks will contain as many individual patches as your synth does. Banks can be loaded directly from your synth, from a previously saved Bank file, or imported from another librarian program—especially if it can save its Banks in raw SysEx format. This means you won't have to start from scratch with The PatchMeister if you've been using another program or if you swap sounds with friends. Each patch or sound in a Bank can be given a name, search key, and a descriptive note. Each of these can be part of a search template that The PatchMeister will use to find sounds

individually (Proteus.default, Mirage.default, DX- 7.default, etc.) The PatchMeister lets you take a Snapshot of your system. A Snapshot contains all Banks and SysEx files of your entire setup, or any portion of your setup, in one file. You may only want to snap the control parameters on your gear and not the patches. No problem. You can modify a Driver to include only control parameters, save it off and use it again later. The PatchMeister gives you complete control over what gets snapped and what does not. You can add notes and search keys, as with Banks and SysEx files. This is a nice way to collect just the information you need, and not be forced to send and receive whole banks of data when you only want to save a few sounds across your modules.

REVIEWS

send individual patches. If you have a reasonably complete MIDI Implementation Chart, an evening spent reading the manual and fooling with The PatchMeister should get you where you want to go.

The Driver is really a collection of different SysEx files. Your synth may have sequences, function banks, drum kits, etc., in addition to sounds. The instructions for sending and receiving these files make up the Driver. Each one must be defined and saved separately in the Driver Creation window.

There are only two items that cause permanent changes to your Driver, the Eraser and the Up arrow. The Eraser deletes SysEx types from the Driver and the Up Arrow writes whatever changes you've made in the workspace to the Driver. Most of the Driver creation window in The PatchMeister is workspace for making and modifying these SysEx files. You can make whatever wild changes you want, test them out, modify and discard them without changing the Driver until you are ready to.

Blue Ribbon Family Member

If you are a Blue Ribbon person, you'll be happy to know that The PatchMeister can be integrated into Bars & Pipes Professional and SuperJAM! as an Accessory as well as operating as a stand-alone librarian. It can also take full advantage of the Triple Play Plus MIDI interface when loaded as an Accessory in B&P Pro. This means you can load and save patches from within your B&P Pro or SuperJAM! creations. This can be a big help in live performance situations. You'll never have to listen to the singer tell lame jokes or order another beer while you manually call up the right sounds for each new song. This will also be helpful in the studio. Just load all those sounds you used when creating the piece with the Auto Load feature. Another nifty feature of The PatchMeister Accessory is the Patch List. This will allow you to load patches from your synth or from disk through The PatchMeister and then select them by name to produce and insert program changes in B&P Pro and SuperJAM!. And since SuperJAM! can be loaded as a B&P Pro Accessory as well, you can have all three up and running together for a monster music making machine.

Bricks & Bouquets

As nice as The PatchMeister is, no review would be complete without a few bricks to accompany the bouquets. After all I said about editors being overkill for many people, I feel slightly crippled without some patch editing features. I find not being able to tweak sounds on the fly to be a limiting factor.

The PatchMeister should return to the default patch bay setting after retrieving

or sending a file. This becomes especially important if you use The PatchMeister as an Accessory to Bars & Pipes Professional. As it stands, you'll have to go to your patch bay and manually return it to your master setting, or you'll have to create a dummy patch that switches to your Amiga configuration.

Any program that lets you delete or erase something should have an Undo option or pop up a "Are You Sure?" type requester before going through with any potentially destructive action. Relying on the user to protect himself from unwanted deletions is a notoriously shaky proposition at best. A set of safety nets would be appreciated.

Most patch bays let you set a global channel that the patch bay will receive its messages on. There should be a way to set this parameter globally for The PatchMeister. As it is, you must set the patch bay MIDI channel for every Driver in your setup. While not dangerous, this can be needlessly time consuming with a mid to large size set of MIDI gear.

The Print feature doesn't recognize page breaks, nor does it advance the paper to the top of the next sheet. This is a bit primitive for an otherwise elegant program. Be prepared for some experimentation to make this feature perform satisfactorily.

The otherwise excellent manual could use a few more graphics to accompany text. The section on Driver Creation had me staring at the screen, trying to match up descriptions with icons and gadgets.

Be Here Now

There was a time when you had to be able to program your synth to get any sound out of it. In some ways it was a simpler process; most analog synth programming was a straight-forward affair and most synths followed a common architecture. For better or worse, those days are gone. If you are one of the gifted few who understand the ins and outs of their MIDI setup, and enjoys the challenge of programming their own sounds, by all means, get an editor or editor/librarian package like MidiQuest or X-o-R. But if all you need to do is organize and save sounds and other MIDI data, The PatchMeister is for you.

The PatchMeister
Blue Ribbon Soundworks
1293 Briardale Lane NE
Atlanta Georgia 30306 USA
Phone Number:
(404) 377-1514
Inquiry #203

PhunnyPhonemes

by Rick Manasa

PhunnyPhonemes is a set of educational exercises in game format designed to help a child in the early primary grades learn how to sound-out words by understanding phonemes, the basic building blocks of speech.

PhunnyPhonemes approaches reading from the phonetic spelling, rather than the sight reading and memorization angle. The manual acknowledges the value of both methods, but points out that there's only so much that can be placed on two disks. Memorization and sight reading seem to come together through repetition anyhow, whereas the set of general purpose tools and rules of phonetics can be applied to almost any word you're likely to run across.

PhunnyPhonemes is designed to teach phonetic spelling. The long-range goal is not only to facilitate a grasp of phonemes, but also to improve reading skills. While the process can be initially frustrating at times, the benefits accrue as one gets on in years and must recognize and pronounce more and more complicated words regularly.

PhunnyPhonemes comes on two non-protected disks and is hard drive installable with the included installation utility. Since the program writes to disk during the lessons it is important to use copies and not the originals. This way you can have different disks for different children. This can be most helpful if you run a reading lab or tutoring service or deal one-on-one with more than one child on a regular basis. While PhunnyPhonemes does multitask, you'll find that bouncing back and forth from screen to screen can temporarily interrupt program display and screen scrolling.

PhunnyPhonemes starts quick and lively, but slows into a lecturette format. Given the nature of the program, this is unavoidable to a certain degree. Still, this may not hold a child's interest very well, as it is sometimes hard to understand what the computer is saying. Telling a child he's going to play a game, and then asking him to listen to a computerized conversation about phonemes may cool interest as well. The first lecture is longer than the others, because of registration and "first day at school" activities. The remaining lectures are shorter and more to the point. This will minimize burnout and hopefully increase the child's willingness to continue to explore the program later on.

Where Are the Grown-ups?

The manual is written for the adult. Unlike solo activities such as games and adult applications like word processing, PhunnyPhonemes is designed to be used by a child with an adult actively participating, or at least close at hand. This is not a set-and-forget kind of program. Adult par-

icipation appears almost essential to decipher some of the pronunciations and word meanings and to help maintain interest during some of the screen changes and setups. While PhunnyPhonemes can be used in a classroom setting, it seems better suited as an after school activity, somewhere between out and out playtime

another "anti-gravity" matter. The pointer becomes a little space-suited figure in the space station portion of PhunnyPhonemes. This figure floats around the active "dot" of the pointer in an anti-gravity kind of way. The problem with this, is that you can't always position the pointer accurately for selecting and releasing letters. It is especially maddening to try to click on the "Word Done" button when the little guy keeps spinning around. It appears that they will have to have almost perfect hand-to-eye coordination to keep from getting into trouble at the PhunnyPhonemes space station. This seems needlessly restrictive, considering the general dexterity level of the crowd that PhunnyPhonemes is aimed at.

Choose Your Words Carefully

Some of the word selection could stand improvement. Some words, like "mete" and "rede," have meanings and uses far removed from the everyday life of the 6-11 year old. How many of you would spell "mete" or "rede" that way, if asked by a computer program, and not "meet" or "read"? Parth Galen should either select words that have only one possible spelling or use the context sentence immediately after asking for the spelling of a word.

The LessonMaker utility is a powerful tool but it requires a certain level of understanding of the subject material and of the workings of the Amiga to be effective. An extra lessons disk from Parth Galen, available to registered owners for a small fee, would be one way that parents could get extra lessons without having to crack the books on the use of the CLI and the speech facilities of the Amiga, and without having to learn enough about phonetics to design some additional lessons for their child.

PhunnyPhonemes could use a repeat or rewind button to complement the Wait function for the classroom portion of the program. Sometimes your attention wanders and you miss something that the computer is saying to you. Having to lose points or repeat a lesson because the adult had to answer the phone, or deal with the dog barking at the mailman, is unfair to the child. Some type of rewind function would allow you to repeat sections you missed without repeating the whole lesson.

Recommendations

This is a tough one to call. On the one hand, here is an educational product written on the Amiga by a company committed to developing educational software for the Amiga and only for the Amiga. When a company decides to take a risk in the educational software arena, buck the trends and program for the Amiga exclusively, they deserve our support.

On the other hand, the software has to perform up to snuff. If anything, educational software has to be more precise, more user friendly, more foolproof than other types of software. Enough testing with children in all possible settings should be accomplished until the released version of the program meets all stated objectives and goals in an elegant and delightful way, delivered in a completely bullet proof manner.

PhunnyPhonemes

Parth Galen Software

P.O. Box 482 Cold Spring, MN 56320-0482

(612) 685-8871

Inquiry #203

Special Requirements: Workbench version 1.2 or greater, minimum 1 meg memory

PICK A PHUNNY LESSON									
VOWEL SOUNDS			CONSONANT SOUNDS						
LONG			SOFT		HARD		BLENDS		ENDINGS
A E I O U Y			L R N M		B P D T K G C X		BL CL DR FL GL PL TR SC SH SP SL		CT FT LT LF
SHORT			L R N M		B P D T K G C X		BL CL DR FL GL PL TR SC SH SP SL		CH LH PH GH TCH
A E I O U Y			L R N M		B P D T K G C X		BL CL DR FL GL PL TR SC SH SP SL		CK CH SC WR MB RH GH GN MN
SILENT			L R N M		B P D T K G C X		BL CL DR FL GL PL TR SC SH SP SL		LE LY ED ING FUL NESS LESS
E			L R N M		B P D T K G C X		BL CL DR FL GL PL TR SC SH SP SL		DGE SIO TIO
SCHWA			L R N M		B P D T K G C X		BL CL DR FL GL PL TR SC SH SP SL		TIE TIA CIA CIO
A E I O			L R N M		B P D T K G C X		BL CL DR FL GL PL TR SC SH SP SL		
DIPHTHONGS			L R N M		B P D T K G C X		BL CL DR FL GL PL TR SC SH SP SL		
EA EE EI EO EU EN EY			L R N M		B P D T K G C X		BL CL DR FL GL PL TR SC SH SP SL		
IA IE IO			L R N M		B P D T K G C X		BL CL DR FL GL PL TR SC SH SP SL		
OA OE OI OO OU OW OY			L R N M		B P D T K G C X		BL CL DR FL GL PL TR SC SH SP SL		
UA UE UI			L R N M		B P D T K G C X		BL CL DR FL GL PL TR SC SH SP SL		

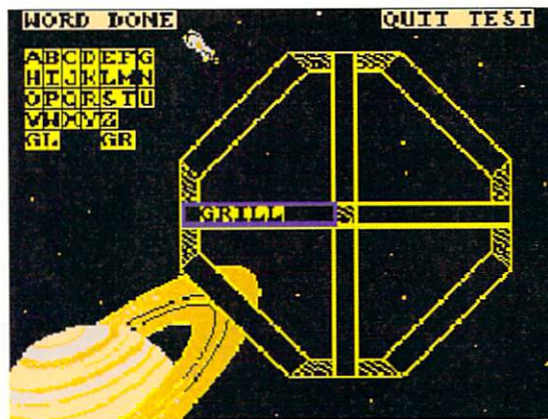
and tutoring.

There is a set of utility programs provided to help customize and modify PhunnyPhonemes. The Test Report utility displays a list of the words in a test file and shows which ones have been correctly spelled by the child. The Get Status utility shows the student's name, last lesson studied, which lesson is recommended to be studied next and which lessons the child has been tested and passed on. The Set Status utility lets you change the student's name or skill level. This is useful if you have an older child using the program for the first time, who may not need the first set of lessons. You can assign him a higher skill level and let him start at a more appropriate position. LessonMover copies lessons from the PPLessons: disk to the PP: program disk and updates appropriate files. This is especially helpful for running PhunnyPhonemes on one-disk systems.

Concerns and Suggestions

I've come to expect better graphics and sound than you'll see and hear in the space station portion of PhunnyPhonemes. The graphics were virtually indistinguishable from what you might expect on an Apple II educational program. Why pass up such obvious strengths in the Amiga as sharp graphics and 8-bit digitized sound?

I found the letters to be surprisingly hard to place on the space station, as you're instructed to do (anti-gravity maybe)? Worse yet, once placed, they cannot be moved. While you can erase letters and place new letters over old letters, I don't see the purpose in preventing the student from moving the letters after they have been placed. The pointer is



Narrator vs. Digitizer

The success of such a program relies heavily on clear pronunciation and being able to understand speech. Therefore, it's a puzzle why Parth Galen chose to use the Amiga's built-in Say feature instead of digitized speech, as, for example, the Audio Gallery line of products does. The nuances of human speech are too subtle for the Amiga's built-in speech synthesizer to enunciate satisfactorily. The disadvantage of digitizing the key words is that it would probably limit you to using the supplied word list. You'd need a digitizer of your own to make additions to the word list. Still, I think I'd like a version of PhunnyPhonemes that did use digitized speech and pictures, if only to compare how each version held a child's interest and fostered retention. At the very least, the lectures could be digitized. This would certainly improve clarity and allow the programmer to pick from a wider palette of interesting, and more understandable, voices. You could reserve the narrator device for the word list. This would give you the best of both worlds, and greatly improve the overall delivery of the lessons.

SunRize

AD1012

Digital Audio Board & Studio 16 Software

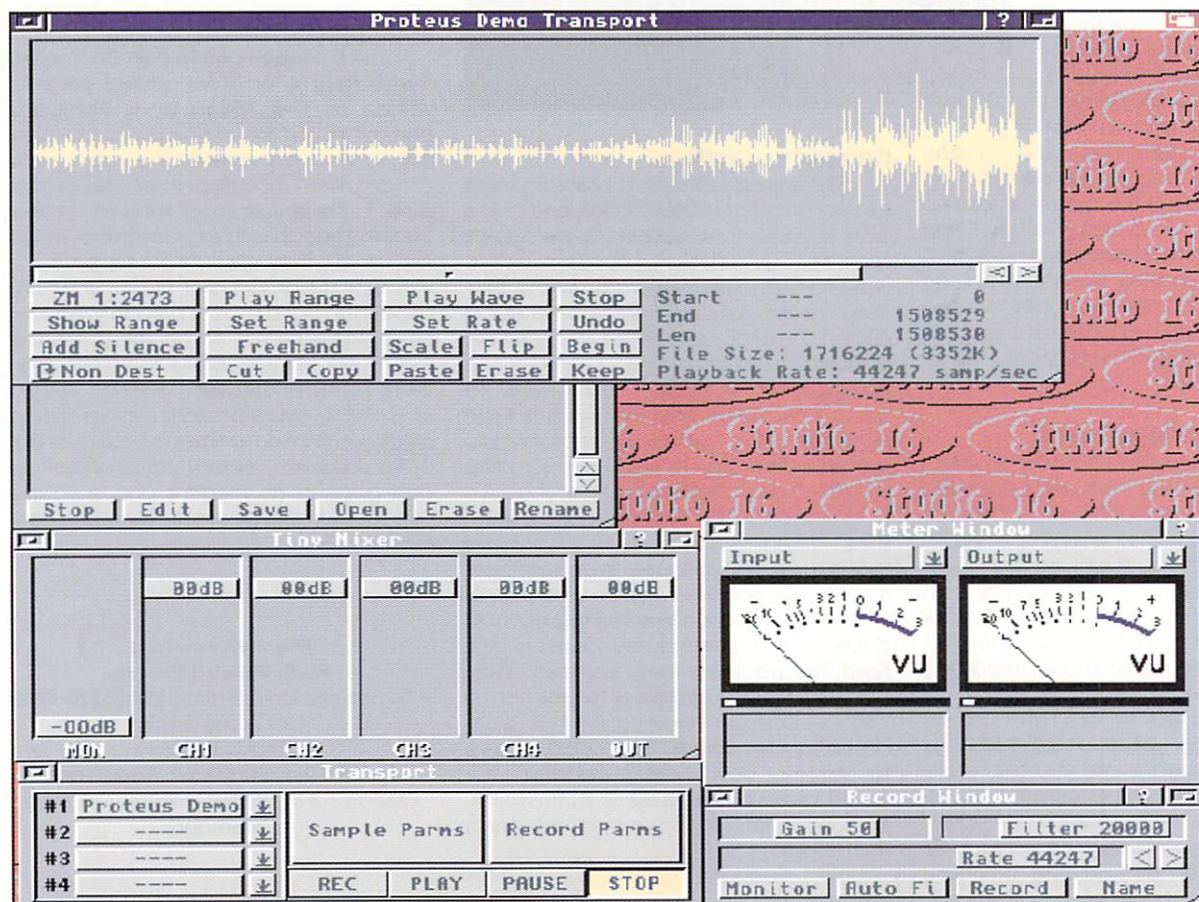
The 12-bit AD1012 Digital Audio Board from SunRize, and its just released 16-bit big brother, the AD516, are the first of what we hope will be a growing collection of high-end digital audio products to complement the stable of pro-level sequencers, editors, and librarians already available for our favorite computer. With the Amiga's strength in multimedia and video, it's surprising we haven't seen a corresponding development in pro-level audio tools and add-ons before this. The AD1012 signals that this is changing, albeit

slowly. As of today, if you want better than 8-bit audio and hard disk recording, the AD1012 is the only game in town.

Just the Facts

The AD1012 hardware and the included Studio 16 software allow you to record one track of audio directly to your hard drive for editing and playback. While you can record only one track at a time, you can playback up to four tracks at once and you can record and playback at the same time, for syncing to previously recorded passages and for overdubbing. The AD1012

board includes RCA jacks for audio in and out, and a SMPTE in-jack for synchronizing your audio to time code from an external source. The audio lines are unbalanced and the SMPTE reader reads linear time code, but not vertical interval time code without a converter. The SMPTE reader with the AD1012 is a real-time reader. That means it can't read time code in fast forward or rewind modes. These limitations, coupled with its less than CD level sampling rate, put the AD1012 a bit below the 16-bit professional level products for the Mac and IBM, but still miles ahead of 8-bit sound. If



Sampling, editing, mixing, and adding effects are made easy with the Studio 16 software for the AD1012.

Hard Disk Digital Recording System for the Amiga

by Rick Manasa

you consider the AD1012 as a promise of things to come, the differences in quality and features become easier to take.

All Studio 16 functions can be integrated into *Bars & Pipes Professional*. The SunSet Accessory, the SunMPTE Accessory, and SunRize Out Tool will allow you to run Studio 16 from within Bars & Pipes Professional; synchronize your MIDI compositions to SMPTE; and lock samples to specific MIDI notes—useful for syncing sound effects to music or video. SunRize has put a 2105 DSP sound coprocessor chip on the AD1012 to handle a lot of the tasks associated with recording and playback, so your Amiga can concentrate on running other applications. Those thinking about incorporating Studio 16 into B&P Pro will appreciate that.

The manual, which comes on a three-ring binder, is well laid out and easy to use. It opens with a brief but clear explanation of digital audio and the differences between 8-, 12- and 16-bit sampling. Keep in mind that while the AD1012 will sound concert-halls better than the internal sound circuitry of your Amiga, it isn't up to CD standard and it isn't a stereo recording device. This is more than adequate for most multimedia and video applications, and will have to do until the AD516 comes along. If it's any comfort, most comparable products on other personal computers record in mono as well.

Busted by Buster

We discovered an incompatibility between early versions of the A3000 Buster chip and the AD1012 board. After bootup, Studio 16 would display a "GETW Read Not Recognized" error. Anthony and Todd at SunRize were very helpful, sending new handlers to try, testing the board, and finally sending a new replacement, even though the board that generated these error messages checked out OK. When we

discovered the problem, Anthony asked for the faulty chip so they could run tests on it at SunRize. This shows a high level of commitment to product support and excellence, which is absolutely necessary if the Amiga is going to make inroads into the field of professional digital audio. Compliments to SunRize for going the extra mile to show that they take their product and what it represents seriously.

Unusual Terms

While this is most definitely an Amiga product, there are some non-standard gadgets and terms. Most windows (called Modules in Studio 16) have a "?" button in the title bar, called the "Preferences" button, which brings up a list of display and handler options. While there are no menus on the main screen, there are menus, called Drop Lists, attached to many windows. Other window gadgets are the standard fare: the Zoom gadget, called Minimize/Maximize, shrinks the window, instead of expanding it; the Depth and Resize gadgets operate as you'd expect. All Modules in Studio 16 are either Utility Modules or Application Modules and are loaded from the Instance List window—now there's a peculiar name—which is always available on the main screen. Utility Modules include all the behind-the-scenes stuff—handlers, disk I/O, and the like. Applications are most of the Modules you'll actually get your hands on in Studio 16—the CueList, Mixer, SMPTEmonitor, etc. Loading a Module from the Instance List makes it resident. Resident modules have been loaded into RAM and are always available. One of the advantages of this modular/resident approach is that multiple versions of the same module can be loaded at one time. This means, for example, that you can edit more than one copy of the same sample at one time. It also means you can cut and paste between different

samples. When you settle on a comfortable working environment, you can save which windows will be opened on bootup, their locations, default paths, buffer sizes, screen colors, etc.

The Master Preferences module is where most of the housekeeping duties are performed in Studio 16. You can design your screen colors here as well as select the default directories for saving samples and locating files. You can select the SMPTE rate and source, change the edit buffer size, and make many cosmetic changes.

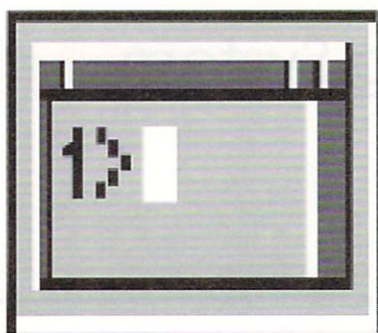
The manual runs you through a brief tutorial to get you familiar with the main elements of Studio 16. Even if you've never used a sampler and editor in your life, you'll find the directions easy to understand and should have your first sample recorded in no time. If you are at all familiar with any of the 8-bit samplers on the Amiga, you'll breeze through the tutorial. Most of the Studio 16 Modules and their functions correspond to similar windows and gadgets in *AudioMaster*, *Audition 4*, or any of the other samplers available for the Amiga.

Let's Get Modular

The modular approach of Studio 16 is very appealing. You can keep commonly used Modules always open and less regularly used Modules available from the Instance list. This minimizes screen clutter and conserves memory. I found myself using the Tiny Mixer, Transport, Record Window, and the Meter Window most frequently, so I saved them as my default startup.

The Meter window operates as most audio meters do, measuring and displaying input and output levels. Each meter displays its information in three ways: a traditional analog VU type meter, a digital

(continued on page 78)



cli by Keith Cameron directory

Are you tired of the way your screen looks? Would you like to see some colors other than blue, black, or gray? How would you like to speed up your mouse? You can make these changes and many others by customizing your Amiga environment. How do you do this? By using an editor.

An editor is a program that allows you to create and/or modify certain files. In the Amiga world, there are two types of editors. The type that you are probably most familiar with is the text editor. On recent versions of Workbench, there are three such editors: ED, EDIT, and MEMACS. The other type of editor is the Preferences editor. This type of editor allows the user to alter Preferences settings. It is this type of editor that is the focus of this month's column. The four Preferences that we will look at are INPUT, OVERSCAN, PALETTE, and SCREENMODE.

As with the programs in the previous two columns, it is possible to access all of these editors via Workbench. However, since this is a CLI column, let's examine how to use them in relation to the Shell. Each of these programs is located in the Prefs drawer of Workbench 2.04. All four of these editors have a window complete with a menu. This menu allows the user to save different settings for the editor being used. I'll discuss this more fully later.

Let's begin with INPUT, which allows you to alter how fast the mouse pointer moves, how much time is required for double-clicking the mouse, and key repeat speeds should you want to hold down a letter on the keyboard to be typed repeatedly. Like some of the Commodities Exchange programs we have looked at the previous two months, simply typing INPUT on a command line will open a mouse-driven window.

Once the window opens, it is easy enough to make any adjustments you want to. Since for the most part the INPUT window is self-explanatory, I will concentrate only on those aspects which might cause some confusion.

As regards mouse speed, the lower the number, the faster the pointer will move. One advantage of a faster mouse is that it requires less desk space. To adjust your mouse speed, drag the slider bar in the direction desired and the number will increase or decrease. Acceleration is a nice addition to this editor. It allows the user to exercise more control over the mouse when small movements are made while increasing the speed when larger movements are made. Before this version of Workbench, it was necessary to locate a shareware or public domain program that accelerated

mouse movements. I highly recommend that you at least try this feature.

The double-click feature allows the user to set the amount of time between the two clicks of a double-click. Once again, a slider bar is used to make adjustments here. This feature can be set from two-tenths of a second to four full seconds. If, for example, you decide to select three seconds, you will then have three full seconds in which you can double-click the mouse. If you select six-tenths of a second, you must double-click the mouse in much less than a second for the double-click to function as intended. The Show and Test gadgets allow you to experiment with different settings. Select Show and a box will appear for the length of time set for double-clicking, thereby allowing you to visually see how long the set time is. Double-click on the Test gadget to see if your double-clicking speed is within the set time. "Yes" or "No" will appear next to the Test gadget indicating whether your speed is sufficient.

If you find yourself holding down keys to be typed repeatedly, the key repeat delay and key repeat rate may appeal to you. The key repeat delay sets the amount of time which will elapse from the time a key is first held down until it begins to repeat. The key repeat rate determines the amount of time between repeats of a key. If you select a small amount of time, a key will be repeated faster; a larger amount of time slows down the repeat speed. The range is from 0.20 to 1.50 seconds. The customary slider bar is again used to adjust this feature.

Finally, the action gadgets at the bottom are self-explanatory, more or less. To save changes so that they are in effect whenever your Amiga is booted, select SAVE; to try the changes you have made without saving them, choose USE; to exit the program without making any changes, choose CANCEL.

Our second editor, OVERSCAN, allows you to alter the size of the display area for text and for graphics. Technically, the term "overscan" refers to the area of space that exists outside of the screen on the monitor. Although most screens use all of the space on a monitor, sometimes a small area is left unused. This is the overscan area. OVERSCAN, the editor, will allow you to use that area.

When you run OVERSCAN, you will see a window with one or more display groups in a scroll gadget at the top. On my machine, "ntsc.monitor" appears; this is the default since I live in the U.S. If you live outside the U.S., you may have your default set for PAL rather than NTSC.

To begin editing the overscan area, select a display group. Once you have selected a display group (you may have only one), you can then select the "Edit Text Overscan..." gadget. Before you will appear a screen with nine black squares. The eight squares along the outside are connected with a line which represents the size of the screen and the extent to which text will appear. Place your pointer over any of these, press and hold the selection button, and then you can enlarge the screen by dragging the square outward. What first appears seems to be the smallest you can make the screen; remember that you are overscanning, that is making larger. The central square allows you to center the entire screen, once again by dragging it to its desired location.

The instructions on the screen are adequate for informing you how to save or cancel the changes. You can also use the menu bar, which is hidden but appears once the right mouse button is held down.

Below the "Edit Text Overscan..." gadget is the "Edit Standard Overscan..." gadget. This allows you to set the perimeter for graphics and other data. In fact, you can even adjust the screen so that images run off the screen. Once again, the nine black squares will appear, and they can be used as before.

Below the above two gadgets is a display showing the sizes, in pixels, of the overscan areas. The default for each area is 640 x 200 for an NTSC system. The Maximum Overscan shows the largest the overscan area can be.

PALETTE allows the user to change the colors of Workbench. Once you open this window, you'll discover a fairly-simple-to-use tool which can create all of the Amiga's 4,096 colors. At the top of the window are five squares, each with a different color. The four on the right display the four colors of Workbench. You can select which color you wish to change by clicking on one of these colors; that color will then be displayed in the square on the far left. You can then use the sliders below the boxes to adjust this color. For example, if you wish to create brown, set the red slider on 8, the green slider on 5, and the blue slider on 0. For red, set red to 15, green to 0, and blue to 0.

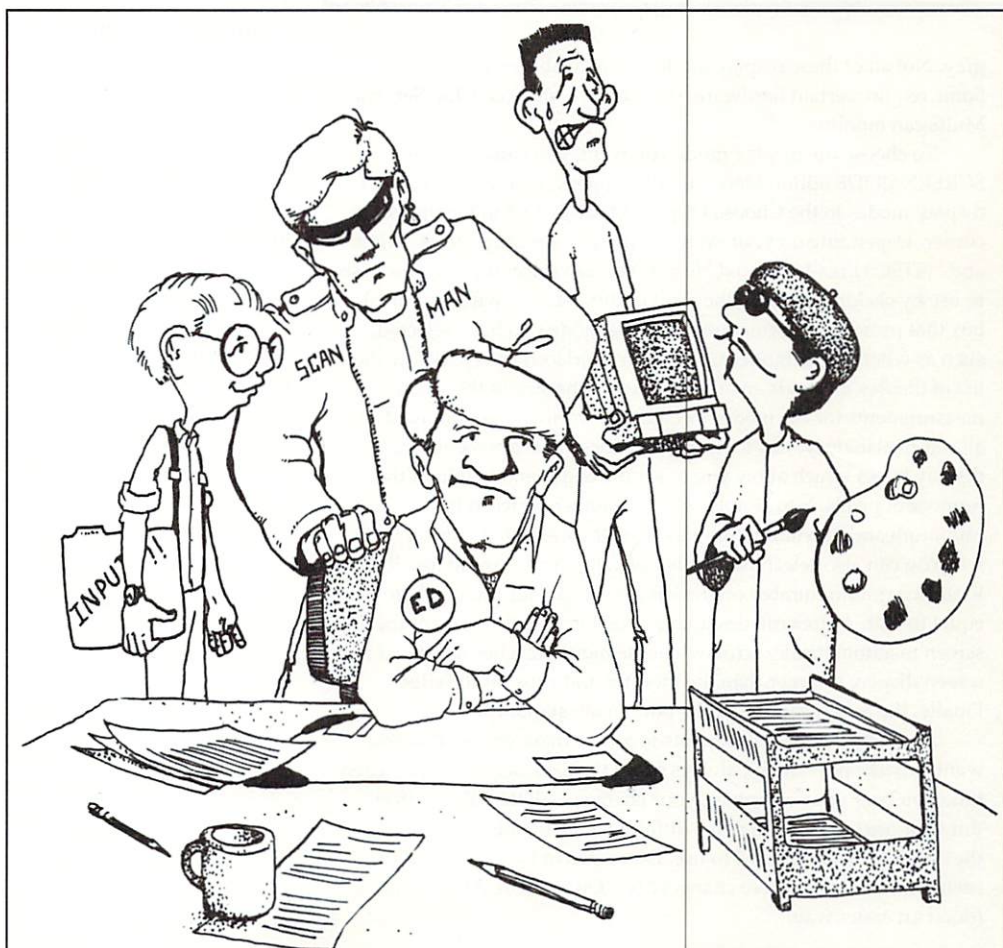
In the Edit menu on the menu bar, there is a Presets menu item which lets you select nine preset colors. These rather unusual colors include Ocean, Steel, and Wine. As with the other programs, these colors can be saved, used, or canceled. The normal action gadgets appear at the bottom. If you wish to increase the number of colors used, you need to use the SCREENMODE editor.

SCREENMODE allows you to choose a different display mode in case you are using certain types of monitors with your system, like an A2024 or Multiscan monitor. Let's talk

a little about display modes before proceeding.

The display mode that appears on your Workbench screen should be a high-resolution screen, unless you have altered it yourself. This means that it consists of 640 lines of pixels from side to side and 200 lines of pixels from top to bottom if you have NTSC. If you have PAL, you will have 256 horizontal lines of pixels. It is possible to double the number of horizontal lines of pixels if you exercise the interlaced option, but this may cause some screens to flicker. Your Amiga may have a monitor that eliminates such flickering; if not, it is possible to purchase products that will do so. Of course, when the resolution is increased (by increasing the number of pixels), the clarity of the screen is increased. By the way, if you alter your display mode, it will only affect Workbench. A word processing program, for example, would probably set its own display mode upon opening.

Let's look at the display modes that are available. First, there is hi-res, which has already been described to some degree. It has a possibility, in its standard form, of 16 colors. This display is used with day-to-day applications, such as spreadsheets, data bases, and word processors. Next, there is SuperHires, which has 1280 side to side pixels and 200 NTSC and 256 PAL top to bottom pixels. Of course, when operated on interlaced mode, the number of top to bottom pixels can be doubled. This display has a maximum of four colors. It is often used in video applications. Next, if you are serious about desktop publishing, you may be interested in the Productivity display mode. It is 640 pixels by 480 (960 interlaced) pixels. Like SuperHires, it has a maximum of four colors. Finally, there is A2024, which is also good for DTP and CAD/CAM applications. It is 1008 by 800 pixels, and its color range is limited to various shades of



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grey. Not all of these display modes are available on each Amiga. Some require certain hardware, such as the Enhanced Chip Set or a Multiscan monitor.

To choose the display mode you want, you can open the SCREENMODE editor. Once the editor opens, you will see a list of display modes in the Choose Display Mode gadget in the upper left corner. Depending on your system, you may see only "NTSC:Hires" and "NTSC:Hires-Interlaced" listed. You can select the one you wish to use by clicking on it. To the right of this list, you will see a display box that provides information about the mode you have selected, such as whether the mode supports an interlaced screen. Below the list of display modes is an area displaying the size of the screen measurements for the mode selected. The various measurements are all self-explanatory. Just to the right of these measurements are display boxes which allow you to set the width and height of the number of pixels. You simply select a number between the minimum and maximum numbers from the measurements on the left. You can also select the number of colors you want to use. Refer to the maximum number on the left and keep your number below or equal to that. AutoScroll designates whether or not you want the screen to automatically scroll when the mouse reaches its edge if the screen display is larger than the monitor and runs off the edge. Finally, the action gadgets at the bottom are standard.

If you make any adjustments to any of these editors that you want to make permanent, always select the Save action gadget. Each time you boot your computer, your changes will then be in effect. But suppose you wish to make different adjustments depending on the application you intend to use. Do you have to open the editor each time and make those changes? No. Once again, Amiga has found an easier way.

Each editor has a menu bar with three menus: Project, Edit, and Options. Each menu is the same with the exception of the PALETTE editor; it has an extra menu item under the Edit option, which is Presets. Otherwise, all menus and menu items are identical. Since most are obvious by their names, I want only to dwell with "Save As" in the Project menu. Once you make any adjustments you want within an editor, you can then save those changes by using the "Save As" menu item. This does not mean that the changes will take effect immediately or upon booting. However, when you want those adjustments, you simply need to click on the icon. The default path for all changes is the Presets drawer in Prefs. It is a good practice to name the file under the editor's name. For example, if you want to save changes under the INPUT editor, you might choose a name like "Input.wp". Thus, the extension indicates that this file has adjustments appropriate for word processing. I have a frequently used file saved from the SCREENMODE editor which makes available 16 colors. I like to use this file when I'm working in BASIC, so I call it "Screenmode.bas".

Each of these four editors can be accessed via the Shell in the same fashion. Here is the common template for all four:

```
FROM,EDIT/S,USE/S,SAVE/S
```

If you have previously saved a file using an editor, such as "Input.wp" illustrated above, you can then open it by using the FROM option. The EDIT argument simply opens the editor. The USE and SAVE arguments can be used in conjunction with the FROM argument, and they function the same as their action counterparts in a window. Here are some examples. Be sure to use the correct path. The examples below assume the Presets directory is the current directory.

```
INPUT FROM INPUT.WP USE <RETURN>
```

This will simply use the settings in "Input.wp". When the computer is turned off, the settings will be lost.

```
INPUT FROM INPUT.WP SAVE <RETURN>
```

This will save the settings in "Input.wp" so that they will remain in force even when the computer is turned off.

The advantage of using an editor from the Shell is that the editor's window can be bypassed. In the above two examples, the window will not open. Likewise, these command lines can be included in your startup-sequence.

If you boot your Amiga by disk, you can alter the startup-sequence of the disk to include any of the above files. For example, if you have a disk you use to boot your Amiga when you are going to do some word processing, you may want to have faster mouse movement. If you use another disk when you boot for programming, you may want to include a file for using 16 colors in the startup-sequence. Regardless, by using an editor, you can make your Amiga reflect your needs and wants more fully.

Please Write to:
Keith Cameron
c/o Amazing Computing
P.O. Box 2140
Fall River, MA 02722-2140

The PS400 Wand is the newest addition to the line of scanner and OCR products from Migraph. The PS-400 is a full-page wand scanner. It lets you scan larger, full-page images quickly, and the included *Touch-Up* software makes cleaning up and saving your image a snap.

The wand is available with an optional sheet feeder which can handle paper sizes from B5 to 8.5x11 inches. The wand can either be used as a hand-held scanner or placed in the cradle of the sheet feeder. The wand attaches to the Amiga parallel port with a special adapter and has its own power supply. The sheet feeder also has its own power supply.

Scanning

There are four dither patterns for scanning grey scale and color images and a special setting for text and line art, settable on the wand. There is also a contrast control on the wand which allows you to adjust the brightness between the light and dark areas of the image. Scanning resolution for color and grey scale images can be set anywhere between 100 and 400 DPI, in increments of 10. Three settings—200, 300, and 400 DPI—are available for scanning text.

There is a speed indicator light on the wand's display. This light will let you know if you are scanning too fast. It is important to scan at a steady speed when using the wand. Scanning too fast will cause loss of image data. There are notches on the front and sides of the wand to help with positioning and centering.

Performance

We tested the wand using a variety of images, both color and grey scale. The quality of our scans was very good at all resolutions. The *Touch-Up* software is easy to use and works well with the wand. The sheet feeder makes scanning full page images

PS-400

Migraph's newest scanner for the Amiga

simple. It eliminates the problems which can occur when using a hand scanner. However, the special rollers and guides on the bottom of the scanning wand already eliminate most of the problems associated with hand-held scanners such as crooked or jerky scans.

Although apparently designed for use when scanning text, the sheet feeder works just as well, if not better, for scanning images than using the wand alone. We used the wand/feeder combination for most of our scans. It made scanning everything from letters to 4x6" photographs to full-page color prints as easy as if we were using a flat-bed scanner.

The *Touch-Up* software requires at least 1MB of memory to operate. For

scanning and displaying larger images at high resolutions, more memory is recommended. My A2000 has 8MB of RAM and had no trouble at all. The PS-400 will be a tough competitor in the scanner market. The sheet feeder is perfect for quickly scanning multiple page documents. The unit is easy to use and the accompanying software is excellent.

PS-400 Wand Scanner •AC•
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Affordable

Desktop

Color

How to Print Color on ANY Black and White Laser Printer

by Patricia Zabka Kaszycki

Remember wishing for, and saving or borrowing enough money to buy your first laser printer? You loved the hi-res look of those 300 dots per inch. You were impressed with the laser's quality output and concluded your money had been well spent and invested. Later on, when you and your new laser printer got used to each other, remember how many times you wished that you could get more than just black and white output? Color. We all wished for color. But in those early days of desktop publishing there were only a couple of ways to get color output. One was to send or deliver a camera-ready mechanical to a commercial printer—and pay big dollars for color printing. Another required you to be artistically inclined or trained and skilled in professional graphic design techniques—because with these skills you could manually and laboriously add color to a laser printed black and white page to create your finished comprehensive. Then you could take the comprehensive to a quick printer and pay for color copies of the art work. The choices were expensive. Neither was immediate; you had to wait for those graphic designers and printing presses to complete the work.

Thank goodness that state-of-the-art technology moves fast, because it wasn't too long into desktop publishing's beginning before color laser printers were released to the market. Unfortunately their price tags were, and still are, triple and quadruple what black and white laser printers cost. Owning a color laser printer is an out-of-budget reach for most of us fledgling and/or experienced desktop publishers. Getting quality color output from the desktop printer moved to a permanent place at the top of many "wish lists," including mine. That is until now.

Today there are ways to get affordable, permanent, and quality color output from black and white laser printers—and at your very own desktop. Three products on the market make desktop color easy and inexpensive. For under \$20 you can buy a new product called Desktop Color Foil™. This product is a foil-colored film-type material that is heat activated and will adhere to the black toner on paper when it passes through your laser printer. There are 16 different colors, some exotic like Silver Triangle and Purple Prism; some basic like Gold or Red. The product comes assorted as 8 by 11-inch sheets, or you can buy individual colors by the roll. The rolls are two inches wide by 25 feet long so there is enough product to make about 100 copies of your favorite design ideas—that's about \$.20 per page. Not bad when compared to somewhere in the neighborhood of \$5,000 for a color laser printer, or \$10 and up for sending a disk or downloading a file to a service bureau for color output.

The second product is a Letraset release called Copy FX™ Laser Printer Color Foil Transfer Sheets. The price tag—under \$20. This Letraset product is also a foil-colored film-type material that is heat activated and will adhere to the black toner on paper when it passes through your laser printer. Your color choices include five metallic colors: gold, silver, silver glitter, metallic red, and metallic blue. The Copy FX™ Color Foil Transfer Sheets come only as sheets—there are no rolls. Be specific when ordering and ask for Copy FX™ Color Foil Transfer Sheets because this Letraset line also has horizontal and vertical graduated continuous tone colored specialty papers simply named Copy FX™.

Here's how both Desktop Color Foil™ and Copy FX™ Color Foil Transfer Sheets work. Use your AMIGA and your favorite desktop publishing software to create your design. Use your laser printer to output the page. Decide where on the printed page the color imaging will appear. Then cut a piece of the foil material to fit that shape on the laser copy. For timid desktop publishers the products come with a backing-sheet that works like tracing paper so you can trace the image area, place the tracing onto the foil material, and then cut using the tracing as a template.

Next, place small self-adhesive dots, supplied with the product, to secure the color foil on the paper covering the area where the final color enhancement will go. Put the paper back into your laser printer's manual feed bin. Create a blank page with your software and send a print command to your printer. When the paper exits the printer, remove the dots and peel away the film

these papers lost their lure when printed on the desktop because you couldn't easily read the black toner graphic images or text on the dark papers, and the graphic images and text on the bright papers lost the element of contrast. Not any longer. Just pick a color foil or color strip and place it on the image on the dark paper and wait for the beautiful contrasting result.

Besides the brilliant contrasting papers, try the marble-type papers with one of the Silver metallic foils. You'll impress yourself with the many multi-colored results possible, as you test and enhance design ideas from simple letterheads and logos, to posters and brochures, creating colorful graphics for all of your publishing projects. For double-dazzling effects, mix more than one of the foil-colors on the same page. For almost endless other combinations, try laser printing the same design on different colored papers and then blank printing different colored foils on each variation. Let your imagination play.

There are so many options with these wonderful, easy to use, and almost magical papers, foils, and color strips, that I know you'll enjoy experimenting as much as I have. And in case any of you are wondering, these new specialty papers and the foils work with copier machines too. Desktop laser printer or copier, the process is easy, immediate, inexpensive,

and the permanent quality results can only please you. All three products provide the visual experience and excitement of vibrant color on your printed page. Happy Color Publishing!

You can purchase Desktop Color Foil™ and laser printer specialty papers from:

Paper Direct
205 Chubb Avenue
Lyndhurst, NJ 07071-0618
Phone 1-800-A-PAPERS
Fax 201-507-0817

You can find your local Letraset art supply dealer by calling Letraset Customer Service at 1-800-526-9073.

Please Write to:
Patricia Zabka Kaszycki
c/o Amazing Computing
P.O. Box 2140
Fall River, MA 02722-2140

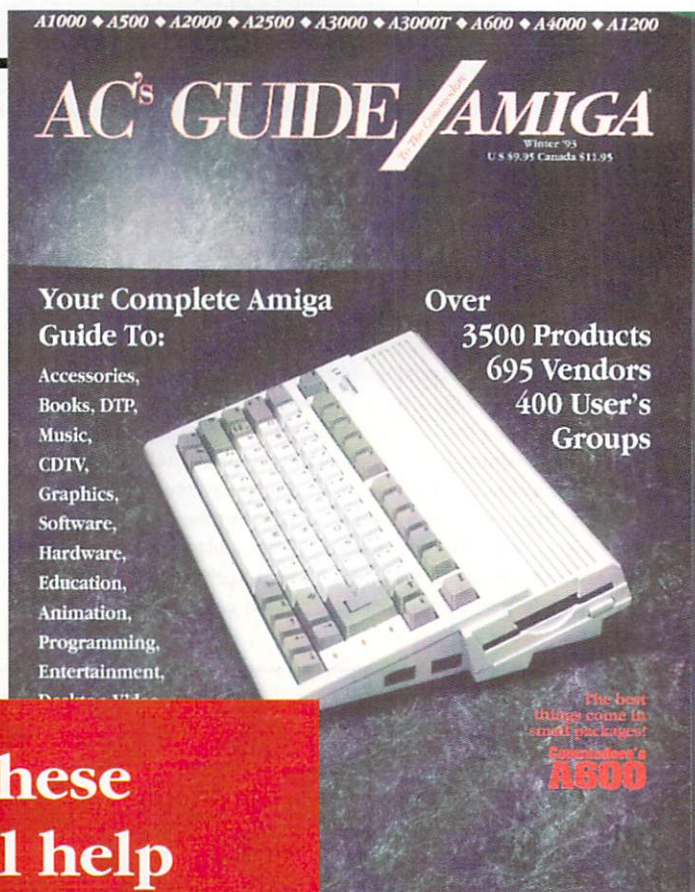
material. The image area where you once had only black toner now has the permanent color of your choice.

The third product is not really new—I've been using it for a couple of years. It's called Color Tag™, and it's also from Letraset. It's a little more involved in make-up and use, but Color Tag™ provides more colors and includes a matte finish option along with the metallic choices. The price—under \$100. The results are vibrant and dynamic. Here's how Color Tag™ works. First, make a laser copy of your design. Then, select a color strip and place it on the laser copy area where you want to add your image enhancement. Now here's where the difference between the other two products comes in. Instead of sticking on dots and printing a blank page, you move this hand-held heated applicator across the Color Tag color strip. Peel away the Color Tag color strip, and voila—instant color magic.

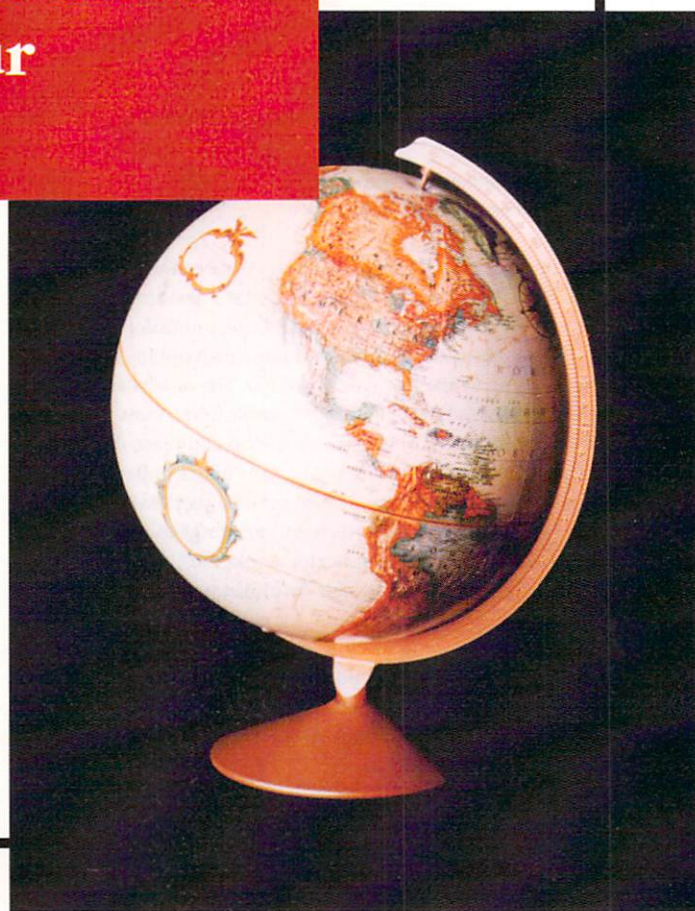
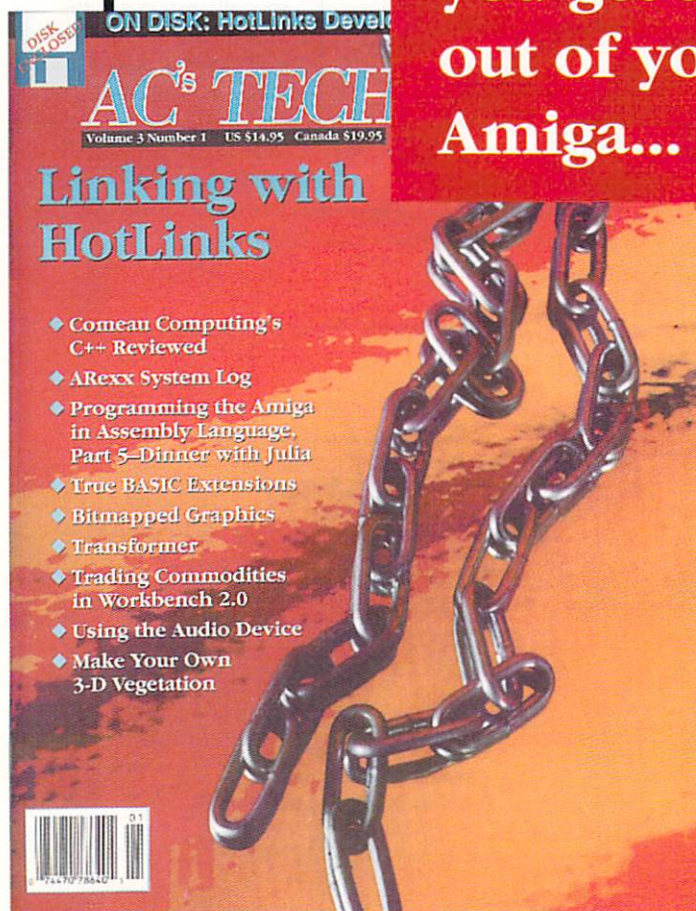
You'll enjoy any or all of these products. Your desktop designs will beg you to play with color possibilities. And you'll be so pleased with the color brilliance and quality of your final design you'll just want to keep playing. Some of my favorite design elements to play with are contrasts.

For some time now there have been some wonderful dark, as well as some wonderful bright new laser printer papers, but most of





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Extending the AMOS Sort:

While working on an AMOS program recently, I needed to come up with a routine that would count the unique letters in some text typed in by the user, sort by the number of each letter, and print each letter with its count in descending order; i.e., from the largest number to the smallest. First, I considered using a Linked-Merge sort I have on hand, but it has quite a few lines of code, and it seemed like overkill to use such a big routine to sort an array of only 26 elements.

So, for the first time, I took a close look at the AMOS Sort function. AMOS is the only BASIC I've used that provides its own built-in Sort function, and this one is quite good. It is very easy to use. All you need to do is provide an array, which can be filled with integers, real numbers, or strings, and call the function with a line like this: `Sort ARRAY(0)`. It is also very fast. Even on my unaccelerated Amiga 2000, it sorts an array of 1,000 integers in less than a second, and 10,000 in under fifteen. The interpreted Linked-Merge sort I mentioned takes a little over 12 seconds to sort 1,000 integers.

Good as it is, the AMOS Sort function does have a couple of limitations. First, it sorts only in ascending order; i.e., from smallest to largest. In most cases, this is no problem. If you want your data sorted from largest to smallest, you can just have your program read out the sorted array in reverse order, with a loop like this:

```
For I=25 to 0 Step -1 : Print A(I) : Next I.
```

However, in some cases this obvious method can have an undesirable side effect.

The more serious difficulty is that the AMOS Sort sorts only simple array elements—not links, or pointers, to other data. Here's the problem. Suppose you use a 26-element array to count letters, as I needed to do in my program. The program can count all the 'A's into `LETTERS(0)`, all the 'B's into `LETTERS(1)`, and so on. At this point, you can easily figure out which array element holds the number of 'J's, for instance. Since the ASCII value of an UPPER CASE 'A' is 65, just find the ASCII value for the upper case letter in question, subtract 65, and that will be your index into the array for that letter. So far, so good. But after you have sorted the array, things are different. `LETTERS(0)` will now contain the number corresponding with the letter that occurred least often in the text that the user typed in. Your program has no way of knowing which letter that is.

Some other sorting routines have a way around this. The Linked-Merge sort mentioned already uses two parallel arrays of the same size. The first holds Keys, which are the data items being sorted on. A Key is associated with a record, and is part of it. It can be a name, account number, phone number, ZIP code, or any other part of a record which you may want to use to arrange your records in a useful order. In a few cases, the entire record may consist of nothing but the Key. Keys remain stationary.

The second array holds Links, which point to Keys and other Links. Links are the data items rearranged by the sort. When the sort begins, the Keys have been loaded into an array one after another in some arbitrary order. The `LINKS()` array holds a consecutive

sequence of numbers. Each number is one higher than the index number of the array element which holds it. That is, `LINKS(1)` holds the integer '2', `LINKS(2)` holds a '3', and so on. A special variable called the HEAD holds the value, '1'. Each Link is said to 'point to' the next Link in the array, except for the last Link, which holds the value '0' (or '-1', or some other value that is not an array element index number), marking the end of the data.

Assuming that the sort routine has been set to sort in normal ascending order, after it has finished, the HEAD will hold the index number of the `KEYS()` array element which holds the smallest Key. If the Key is a number, it will be the smallest number. If it is a name, it will be the first in an alphabetized list of names. The `LINKS()` array element of the same index number will hold the index number of the array element which holds the next Key. To read the Keys in sorted order, you use the index number held in the HEAD to find the first Key, then go to the `LINKS()` array element of the same index number to find the index number of the next element in the `KEYS()` and `LINKS()` arrays. When you arrive at a `LINKS()` array element which contains a zero (or a minus one, etc.), you know that you have come to the end of the sorted list. When you want to find the records themselves, remember that the Keys have not been reordered by the sort. The records may be in a third array, or they may be on disk, probably in a random access file. In any case, whatever relationship existed between the Keys and the records before the sort will still be in force after. Whether `KEYS(N)` was taken from `RECORDS(N)`, or from the Nth record of a disk file, after the sort, you can still find the record associated with any Key.

The main advantage of this scheme is that only the Links need to be shuffled around as the sort progresses. Links are small integers, typically two or four bytes—AMOS integers are always four bytes—and a microprocessor can move them around in memory very quickly. If each record consists of nothing but the Key, and the Key is short, this isn't much of an advantage. But if the records are each several pages long, they can remain on disk in their original order, keeping to a minimum the amount of data that the computer must move from place to place.

The disadvantage is that the Links must be traversed, starting from the HEAD, until you find the Key you want. If you use this routine to sort 1,000 numbers, and you want to find the 500th number, it may be anywhere in the `KEYS()` array. To find it, you must start with the HEAD, and go from Link to Link 500 times, until you arrive at the Key you are looking for. You can't simply look in `KEYS(500)` to find it.

My letter-counting problem at the beginning of this article can't be solved by a routine which handles only simple array elements. It needs a routine which works in a more complicated fashion, like the Linked-Merge sort. There would be no problem if the AMOS sort worked with two arrays simultaneously, like the Linked-Merge sort; or if it allowed you to set up a two-dimensional array, fill one side of the array with Keys to be sorted on, and the other side with data items associated with the Keys, then reorder the entire two-dimensional array by sorting only on the Keys side; but it doesn't.

Improving on the useful AMOS Sort Function

By Dave Senger

You can sort multi-dimensional arrays with the AMOS Sort, but all of the elements will be sorted on and reordered singly. Since the AMOS Sort routine reorders only single array elements, not pairs, we seem to have come to a stone wall. Wouldn't it be handy if we could arbitrarily split each array element into two parts, and use one part as the Key to be sorted on, and the other part as a record identifier, to point to data associated with the Key?

That is exactly what we will do! Here is the essential idea of this article. We will set up two arrays, as the Linked-Merge Sort does, but we will use them a little differently. One array will hold either the records themselves, as strings; or pointers, such as addresses, to records residing elsewhere. The other array will hold the standard AMOS four-byte integers, each of which will consist of two pieces of data. The first data item will be the Key; in this case, a number, such as an account number, or the number of 'T's counted in a piece of text. This is the number that will be sorted on. The second data item will be the Record Identifier, which will point to one of the records or addresses in the other array.

One catch. The AMOS Sort function treats each integer in an array that it sorts as an indivisible unit. How do we get the function to sort only on the Key part of the integer, and ignore the Record Identifier part? Very simply. We will just make the Record Identifier part of the integer too small to affect the sort.

Here's how. We will arbitrarily choose the maximum number of records that we want to sort. I'll call that value the Divisor. Each Record Identifier will be an integer ranging in value from zero to one less than the Divisor. This integer will be used as the index to one of the elements in the RECORDS\$() array. The Key part of the array element will always be an exact multiple of the Divisor.

An example should make this clearer. Suppose we decide that we want our sorting routine to handle no more than 1000 records. That means the Divisor will be 1000. Record Identifiers will range from 0 to 999. The Key portion of the array element will be the value of the Key, times 1000. Now if we want to use this routine to count letters, then sort according to the number of each letter, the RECORDS\$() array elements will each hold one of the letters whose numbers are to be counted. If the RECORDS\$() array elements have been entered randomly, we can sort them before continuing. RECORDS\$(0) will hold the string, "A"; RECORDS\$(1) will hold "B"; and so on. Initially, KEYS(0) will hold the value '0'; and KEYS(1) will hold a '1'; etc. Each time our letter-counting routine counts an 'A', it will add 1000 to KEYS(0), and similarly for each of the other letters. Suppose the letter-counting routine counts seven 'D's in a piece of text. RECORDS\$(3) holds the string, "D"; and the number of 'D's will have been counted into KEYS(3). KEYS(3) initially held '3'. After seven 'D's have been counted into it, KEYS(3) holds the integer 7003. If six 'Z's have also been counted, KEYS(25) will hold the integer 6025. After executing the AMOS BASIC command: Sort KEYS(0), the integer 6025 will be closer to the top of the array than the integer 7003. Even though the Record Identifier for 'Z' (25) is larger than the Record Identifier for 'D' (3), it has no effect on the order produced by the Sort function, nor does it

interfere in any way. It just goes along for the ride. Now, suppose that there were fewer 'Z's counted than any other letter. After sorting, KEYS(0) will hold the integer 6025. This position was originally occupied by the array element representing the letter, 'A'. The position of the array element can no longer be used as a guide to which letter that element represents, but we can still find which letter that is. $6025 \text{ mod } 1000$ gives 25, which is the index number of the RECORDS\$() array element holding "Z". $6025/1000$ gives 6, the number of 'Z's that have been counted.

We have in effect removed the main limitation of the AMOS Sort function. The method even has a couple of advantages over my interpreted Linked-Merge Sort. First, it runs faster. Second, if you have sorted 1000 records and want to find the 500th Key, and its associated record, all you have to do is look in KEYS(499). You don't have to traverse 500 Links.

Reverse English

So much for the big problem. Now let's fix the little one. My claim that the Record Identifier has no effect on the order produced by the Sort function was not entirely accurate—there is one exception. In the example just given, suppose that eight 'D's and eight 'Z's were counted. KEYS(3) would hold the integer 8003, and KEYS(25) would hold 8025. After sorting, the element 8003 would be closer to the top of the array. In this case, the sorted order is determined by the Record Identifiers, which are different, rather than by the Keys, which are the same. If you use the sorted array to print out each letter with its count in normal ascending order, the letter 'D' will be printed ahead of 'Z', in alphabetical order. But if you want to print the counts and their letters in descending order, and you do it using a loop such as:

```
For I=25 to 0 Step -1 Print KEYS(I)/1000, RECORDS$(KEYS(I) mod 1000)
Next I
```

the 'Z' will be printed with its count before the 'D', in reverse alphabetical order, which most users will find counter-intuitive.

One way to fix this would be to load the letters into RECORDS\$() in reverse alphabetical order when using a descending sort, but this would require a little extra effort from the user. I prefer a routine that makes this adjustment automatically. When sorting in descending mode, the routine subtracts the value of the Divisor from the appropriate KEYS() array element each time a letter is counted. The more letters are counted, the smaller the array element will be, and the closer to the top of the array it will appear after sorting. Since the program knows what each KEYS() array element held originally, after sorting, it can use the contents of each element to compute the number of letters counted into it. Either method sidesteps the minor limitation of the AMOS Sort function—that it can sort only in ascending order—and prints out in their original order Records having identical Keys, whether the routine has sorted them in ascending or descending mode.

Using the Demo

I've done my best, but if you haven't found my explanation entirely clear, try the demo. Type in the listing, "IntSortDemo.AMOS", at the end of this article, save it to disk, then run it. Line numbers enclosed in brackets are printed every 20 lines. Don't type them in. To use the demo, imagine that an organization to which you belong has decided to hold a raffle to raise money, and that the top three ticket-sellers are to win prizes. You need a little program that will let you type in the name of each of the ticket-sellers, along with the number of tickets each has sold, sort by the numbers of tickets, then print out each number in descending order (starting with the largest number), along with the seller's name. That is what the demo does.

Before running the demo, enable line 43, "'DESCENDING=True'", by deleting the leading apostrophe ('). Run the demo and enter a few names in the format: "Bowman, Kent", without the quotes. When you have typed in four or five names, enter a '0' to go to the next step. Your names will be printed in alphabetical order. Tap a key, then enter the number of tickets each person has sold. When you have entered the last number, the program will print each name along with its number, sorted by number in descending order. If two or more of the persons listed each sold the same number of tickets, their names will be printed in alphabetical order. To sort in ascending order, disable line 43.

Nuts and Bolts

You can use IntSortDemo.AMOS as a template to make your own sorting routines based on the AMOS Sort function. Here are a few things you should know.

Beginning at line 27, "'Set Buffer 120'", is a block of 11 lines which have been disabled by preceding each with an apostrophe ('). Use this code to find how much variable memory AMOS must allocate to accommodate the arrays that the routine uses, along with the other variables. "Set Buffer 120" allocates 120K. If you need to use this code, enable the 11 lines by deleting each leading apostrophe, and disable all following 'Dim' statements, until after you have found the correct value for the 'Set Buffer' statement. This will allow you to use the routine to sort large arrays of data, limited only by the AMOS size limit for arrays (65,535 elements), and by the amount of memory in your Amiga. While experimenting with the demo, you probably won't want to enter more than two or three dozen names, in which case you won't need to bother using a 'Set Buffer' command, and can just ignore this code.

The AMOS Sort function can sort only in ascending order, but the demo can be used to sort on numerical Keys in either ascending or descending mode. To sort in descending mode, enable line 43, "'DESCENDING=True'".

'MXITEMS' (see line 53) is the name the demo uses for the Divisor. Set MXITEMS to the maximum number of items you want to sort, or larger. If MXITEMS is set to 1000, you can use the routine to sort 1000 items, or 10 items. The only disadvantage in using a needlessly large value for MXITEMS is that this reduces the sizes of the Keys you can sort. AMOS uses four-byte signed integers, which can accommodate numbers within the range $\pm 2,147,483,647$. On page 35, the manual incorrectly states that this range is $\pm 147,483,648$. The maximum value of a Key, multiplied by MXITEMS, must fit within this range. Therefore, the larger the value of MXITEMS, the smaller the maximum value of any Key must be.

When choosing a value for MXITEMS, avoid powers of two, and small, even numbers. The routine uses AMOS's integer division and mod operators, both of which have some quirks that I had to work around. Run the accompanying listing, 'DivTest.AMOS', if you would like to see the unreliable results that AMOS's integer

division produces in some circumstances. As long as you avoid powers of two, you should have no trouble with even values of 20 or higher, and you should have no trouble with any odd values for MXITEMS.

'MXCOUNT', in line 55, is the maximum size of a Key.

The array, TEMP\$(), in line 64, is used to hold the names that you type in. It must be Dimensioned large enough to hold the maximum number of names that may be entered. When all the names have been entered, a new string array, RECORD\$() (line 99), is Dimensioned just large enough to hold all the names, which are then copied from TEMP\$() to RECORD\$(), after which RECORD\$() is sorted. The reason for this two-step process is that if TEMP\$() was Dimensioned to a value larger than the number of names that were actually entered, then sorted, the sorted strings would all be at the bottom of the array, preceded by empty array elements at the top. It is easier to work with a full array. For the same reason, the KEYS() array (line 111) is Dimensioned to exactly the right size before it is filled with Record Identifiers and Keys, then sorted.

The For-Next loop in lines 113 to 115 is used to preload each element of the KEYS() array with a Record Identifier, plus an offset, which is close to the legal limit that AMOS four-byte integers will hold. For an ascending mode sort, the offset is negative, and for a descending sort it is positive. In this demo, each Key is the number of tickets sold by a ticket-seller. When sorting in descending mode, if a seller sells 10 tickets, $10 * MXITEMS$ is subtracted from the corresponding KEYS() array element. Preloading each KEYS() array element with a large positive value allows a Key (in this case, a number of tickets) to be twice as large as would be possible if the array element initially contained only the small Record Identifier integer before the number of tickets, times MXITEMS, was subtracted from it. The larger the number of tickets (the Key), the smaller will be the value of the corresponding KEYS() array element after this subtraction, and the closer to the top of the array this element will appear after sorting.

For an ascending mode sort, each KEYS() array element is preloaded with a Record Identifier, plus a negative offset near the legal limit for AMOS integers. In this mode, the number of tickets, times MXITEMS, is added, so that the array element representing the smallest number of tickets will be at the top of the array after sorting. The negative offset provides the same advantage that the positive offset does when sorting in descending mode. The disadvantage of the method is that it does not allow negative Keys to be used. If you need to sort on negative Keys, you should be able to modify the demo without too much trouble. If you don't want to bother, just wait a bit. There is another good method of extending the AMOS Sort function, which can sort on negative Keys. I expect to do an article on it shortly.

At line 165, there is this For-Next loop:

```
For I=0 To P-1
  X=KEYS(I)
  If X<0 Then Add X,OFFSET : NEG=True
  Y=X/MXITEMS
  If DESCENDING
    If NEG
      Z=MXCOUNT-Y
      NEG=False
    Else
      Z=HALFMXCOUNT-Y
    End If
  Else
    If NEG
      Z=Y
      NEG=False
    Else
      Z=HALFMXCOUNT+Y
    End If
  End If
  Print RECORD$(X mod MXITEMS); " sold -> ";Z;" tickets."
Next I
```


This loop retrieves the contents of the sorted KEYS() array elements in order. If the value is negative, the variable 'OFFSET' is added, to ensure that it is positive, which means that the 'mod' operator in the Print line at the bottom of the loop will always be used on a positive value. Unlike AmigaBASIC's mod operator, AMOS's mod operator produces non-standard results when used on negative numbers. The mod operator appears to behave consistently, and it should be possible to program around the irregularity, but I've chosen to sidestep the problem by using the mod operator only on positive numbers. To see the problem, run the program:

```
X=3 For I=-10 To 10
  Print I;" mod";X;"=";I mod X
Next I
End
```

setting X to values ranging from 3 to 10. For negative values of I, AMOS produces non-standard results. For a comparison, run the same program in AmigaBASIC.

The nested 'If-Else-End If' constructions compute 'Z', the Key; in this case, the number of tickets that each seller sold.

The Print line uses 'X mod MXITEMS' to compute the Record Identifier, which is used as the index to the RECORDS\$() array, which contains a sorted list of the ticket-sellers' names that you have typed in.

The rest of the demo consists mostly of code used to input data, and to check for user errors. For the sake of brevity, I've kept the error-checking code to a minimum. For instance, the demo doesn't bother to check for duplicate names. You may want to be a little more thorough if you adapt the demo to your own programs. I'll save space by not explaining these parts of the demo. Most programmers won't have any trouble following them.

Summary

The AMOS Sort function is very fast and easy to use, but lacks the capabilities of more sophisticated sorts which use pointers. A common use for this type of sort is to maintain a list of players with the highest scores in a game. Usually, these lists are sorted in descending order, displaying the name with the most points at the top. The method just described is one way to use the function for such applications. This method should also work with other simple sorts, such as the Bubble Sort and its variations, which may be worth keeping in mind if you also program in a language other than AMOS.

I've probably reinvented the wheel, here. I haven't come across this idea in any of the computer magazines and books I've read, but it is too simple and obvious to be original. It will be new to many other Amiga/AMOS users, though, and I hope it will be useful to you.

IntSortDemo.AMOS

```
' IntSortDemo.AMOS
' by
' Dave Senger
' Oct. 13/92
'
' IntSortDemo.AMOS shows how to use the AMOS Sort function
' to do the work of more complicated sorts which use pointers,
' such as the Linked-Merge Sort. The demo asks you
' to enter the names of some ticket sellers, then the
' number of tickets each has sold. Next, it prints out
' each name with its number of tickets, sorted in either
' ascending or descending order.
'
' Enable next 11 code lines & DISABLE ALL FOLLOWING DIMS
' to find out how big buffer must be set to for different
' array sizes. Set MXITEMS to 100, 1000, 10000, 65535, or
```

```
' to some intermediate value. Set Buffer to a large value,
' and work down until you get an out-of-memory error. When
' out-of-memory error occurs, allocated memory may not be

(20)

' returned to free memory pool, and you may have to reboot
' to recover it. On my stock Amiga 2000, if MXITEMS is set
' to 10000, Set Buffer 120 allocates enough variable
' memory, & if MXITEMS is set to 1000, Set Buffer 12
' allocates enough. If you intend to type in only a few
' names, no Set Buffer command needs to be enabled.
'
'Set Buffer 120
'MXITEMS=10000
'On Error Goto MEMERROR
'Screen Open 1,640,200,4,Hires
'Dim TEMP$(MXITEMS-1),RECORDS$(MXITEMS-1),KEYS(MXITEMS-1)
'Screen Close 1 : Edit
'MEMERROR:
'Volume 16 : Bell 40
'Curs Off : Locate ,11 : Inverse On
'Centre " <OUT-OF-MEMORY ERROR> "
'Wait 120 : Screen Close 1 : Edit
'
' By default, routine sorts in normal ascending order. If

(40)

' you want to sort in descending order, from largest to
' smallest, enable next code line.
'
'DESCENDING=True
'
' MXITEMS is the maximum number of names that the demo will
' handle. Set MXITEMS from 3 to 65535. Avoid powers of 2
' and small even numbers, as they produce errors when small
' numbers are entered in DESCENDING mode, and when very
' large numbers are entered in ascending mode. There are
' some anomalies in AMOS's integer division. To see some
' of them, run the accompanying listing, DivTest.AMOS.
'
MXITEMS=1000
HALFMXCOUNT=2147483647/MXITEMS-1
MXCOUNT=2*HALFMXCOUNT
OFFSET=MXITEMS*HALFMXCOUNT
HALFMXITEMS=MXITEMS/2
If MXITEMS mod 2 Then ODD=True
'
'
(60)

' DIMensioning TEMP$() to MXITEMS-1 sizes array big enough
' for worst case. If you intend to enter no more than 25
' names, you can safely replace MXITEMS-1 below with 24.
'
Dim TEMP$(MXITEMS-1)
SP$=Space$(79)
OVFLOWMSG$=" <NUMBERS FROM 0 TO"&Str$(MXCOUNT)+". PLEASE TRY AGAIN> "
Screen Open 1,640,200,4,Hires
Inverse On
Centre " <TYPE IN SOME NAMES> "
Inverse Off
Locate 0,4
P=0
Repeat
  Loop:
    If GOOF
      Print SP$
      Locate 0,CURY
      GOOF=False
      Curs On
    '
(80)

End If
Line Input "Input A Name (0 To Stop) ";X$
CURY=Y Curs-1
X=Asc(Upper$(Left$(X$,1)))
While X<65 and X<>48 or X>90 : Rem Chop typos from each end of name
  If Len(X$)<1 Then Gosub ERRFIX : Goto LOP
  X$=Right$(X$,Len(X$)-1)
  X=Asc(Upper$(Left$(X$,1)))
Wend
X=Asc(Upper$(Right$(X$,1)))
While X<65 and X<>48 or X>90
  X$=Left$(X$,Len(X$)-1)
  X=Asc(Upper$(Right$(X$,1)))
Wend
If X$="0" and P=0 Then Screen Close 1 : Edit
If X$<>"0" Then TEMP$(P)=X$ : Inc P
If Y Curs>23 Then Locate ,4 : Vscroll 4 : Locate ,23
Until X$="0" or P=MXITEMS
Curs Off
Dim RECORDS$(P-1)
```



```

(100)
For I=0 To P-1
  RECORDS$(I)=TEMP$(I)
Next I
Sort RECORDS$(0)
Cls
For I=0 To P-1
  Print RECORDS$(I)
Next I
Inverse On
Centre " <PRESS ANY KEY> "
Inverse Off
Dim KEYS(P-1)
If DESCENDING Then X=OFFSET Else X=-OFFSET
For I=0 To P-1
  KEYS(I)=X+I
Next I
Wait Key
Cls
Inverse On
Centre " <ENTER NUMBER OF TICKETS FOR EACH NAME> "

(120)
Inverse Off
Locate 0,5
Curs On
For I=0 To P-1
  LOP1:
  If GOOF
    Print SP$
    Locate 0,5
    GOOF=False
    Curs On
  End If
  Print "How many tickets for ";RECORDS$(I); : Input X$
  X=Val(X$)
  If X<>0
    If X<10*(Len(X$)-1)
      GOSUB ERRFIX1 : Rem Catch typos and oversized numbers
      Goto LOP1
    End If
  Else
    If X$<>"0"

```

```

      End If
    End If
    Print RECORDS$(X mod MXITEMS);" sold -> ";Z;" tickets."
  Next I
  Inverse On
  Centre " <TO QUIT, PRESS ANY KEY> "
  Wait Key
  Screen Close 1
  Edit
  ERRFIX:
  Curs Off
  Volume 16
  Bell 40
  Locate 0,2
  Inverse On
  Centre " <YOU'RE TYPING GARBAGE! PRESS ANY KEY, THEN TRY AGAIN> "
  Inverse Off
  Wait Key

(200)

  Locate 0,2
  Print SP$
  Locate 0,CURY
  GOOF=True
  Return
  ERRFIX1:
  Curs Off
  Volume 16
  Bell 40
  Locate 0,7
  Inverse On
  Centre " <NOT A POSITIVE INTEGER, OR TOO BIG! PRESS ANY KEY, THEN TRY AGAIN> "
  Inverse Off
  Wait Key
  Locate 0,7
  Print SP$
  Locate 0,5
  GOOF=True
  Return

```

DivTest.AMOS

```

' DivTest.AMOS
' By Dave Senger
' Nov. 4/92
'
' Demonstrates anomalies in AMOS integer division
'
A=2147450874 : Rem Also try neg. vals.
C=2147483646
SP$=Space$(79)

Rem Set DIV to a power of 2 (i.e., 2, 4, -
DIV=2 : Rem - 8, 16, etc.), or to a small, odd integer
Do
  If DIV=0 Then Edit
  Inverse On
  Centre " <ANOMALIES IN AMOS INTEGER DIVISION> "
  Inverse Off
  Print : Print
  DIV$=Str$(DIV) : If DIV>0 Then DIV$=Right$(DIV$,Len(DIV$)-1)
  B=A/DIV : D=C/DIV
  Print Space$(5+Len(DIV$));"A =";A
  Print "B = A/";DIV$;" =";B
  Print Space$(4);DIV$;"*B =";DIV*B
  Print : Print
  Print Space$(5+Len(DIV$));"C =";C
  Print "D = C/";DIV$;" =";D
  Print Space$(4);DIV$;"*D =";DIV*D
  Print : Print
  X=1999999999
  Print Space$(3);"X =";X
  Print "X/10 = ";X/10
  ANOTHERDIV:
  Locate 0,18 : Print SP$ : Locate 0,18
  Input "Enter new divisor (0 to quit) > ";DIV
  Cls
Loop

```

•AC•

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Many Amiga 500 owners are in a quandary. Perhaps they were on a budget when they purchased their machine, or maybe they didn't anticipate needing much power. Then they discovered that ray-tracing, sound sampling, and animation with their A500 was not feasible. To accomplish their new goals, they either have to purchase a newer machine with greater expansion capabilities, or expand their A500.

Of all the upgrades that A500 owners can perform, the most beneficial is memory expansion. While free fast RAM is valuable, lots of free chip RAM is more precious. You probably lust for the 2M of chip RAM in the A600, A3000 and A4000, so why not add that capability to your A500? Several companies now make expander boards that give almost any Amiga 2MB of chip RAM. This is an expensive upgrade, as these boards can cost upwards of \$200 without the 2MB Fat Agnus chip.

Some lucky A500 owners have the built-in ability to handle 2MB of chip RAM. In 1990, Commodore released a new version of the A500 motherboard, Revision 6a. This board has an 8372A 1MB Fat Agnus chip installed, but can accept 2MB of chip RAM. To expand these boards, you simply change three on-board jumpers, substitute an 8372B 2MB Fat Agnus chip for the original 8372A chip, and substitute four new higher-density memory chips for the existing lower-density memory chips. Commodore service manuals indicate that Revision 7 boards also have these provisions. Most newer A500s probably allow this modification as well.

You will need a few tools, new components (Table 1), some electronics experience, and a steady hand to modify your computer. If you feel that you cannot perform these modifications, find a friend or electronics repair shop willing to do the job for you.

Background

Before the Revision 6a boards, Amiga 500s used 16 256KBx1 memory chips to achieve an on-board capacity of 512KB. As memory prices came down, the motherboards were redesigned to accept eight 256KBx4 chips, although only four chips were used on the motherboard itself. This cut the number of RAM chips on the motherboard by three-fourths and placed a lighter load on the power supply. The 256Kx4 devices have 20 pins, and are pin-compatible with 1MBx4 chips. The difference between the two devices lies in pin 5—it is unused on the 256KBx4 chip, but is assigned to an extra address line on the 1MBx4 chip.

The difference between the 8372B 2MB Fat Agnus chip and the 8372A 1MB Fat Agnus chip lies in two pins—35 and 56. On the 8372A, pin 35 is used as an external clock input from the video port (_XCLK). Pin 56 is the DRAM control line Row Address Select 1 (_RAS1). On the 8372B chip, pin 35 is assigned to the processor bus A20 line, and pin 56 is DRAM address line _DRA9.

Several changes must be made to the motherboard before the new chips can be installed. Schematic diagrams for the revision 6a/7 motherboards show that four 256KBx4 chips are located in positions U16-U19. These positions have their pin 5 lines tied to the _RAS0 line on pin 4. On the 256KBx4 devices this is no problem as pin 5 is unused. If 1MBx4 devices were placed in these positions, the extra address line on pin 5 would be tied to the _RAS0 signal, and the chips would not operate properly.

The four unused positions (U20-U23) normally have pins 4 and 5 tied together as well. However, a set of motherboard jumpers (JP3) controls the routing of the _RAS0 and _RAS1 lines to U20-U23. By changing these jumpers, pin 5 may be separated from pin 4 and routed to the _DRA9 address line on pin 56 of the 8372B.

The second area of change involves pin 35 of the 8372B. In order to address the extra memory, the CPU address bus line A20 must be connected to this pin instead of the _XCLK line. Jumper JP5 switches pin 35 between the _XCLK and A20 lines. The third change involves expansion RAM mapping, and JP2 controls this function. The default mapping for expansion RAM starts at C00000. This must be changed to 080000 to allow proper operation.

There is one important point to remember and one catch-22 to this conversion. First, you have to use the A3000's 8372B 2MB Fat Agnus chip. Several chip vendors offer the new 2MB Fat Agnus

THE FAT A500 A Chip RAM expansion project for your Amiga 500

by Phillip R. Combs

employed in the A600. Now for the catch-22: once the board is modified, you will not be able to access any A501-compatible memory you have installed in the trapdoor memory expansion slot. Your A500 will not even boot up with one of these cards installed. This also means that you cannot access the clock/calendar on that memory card. This was probably why Commodore chose to use the second 512K on the memory card as chip RAM, and not market a separate clock/calendar card. Some aftermarket multi-megabyte cards that use the trapdoor should still work, as they employ different methods for gaining access to the necessary signal lines. It is possible to modify your memory card to allow clock/calendar use by disconnecting several signal lines on the card itself. This modification will be discussed later in the article.

The Conversion

The steps to convert your A500 follow, but first, several cautions are necessary:

When using a soldering iron on your PC board, do not apply too much heat to the board. Use a 15-watt soldering iron, and apply heat no longer than 4-5 seconds at a time. You should then remove the iron and allow the joint to cool for fifteen seconds before reheating the joint. Apply heat only as long as is necessary for a good connection. Also, do not touch the chip leads with your fingers. Doing so could deliver a damaging static electricity shock to the component.

1) Remove any expansion modules on your machine then remove the cover.

2) Find the keyboard wire harness, and follow the wires to where they plug into the motherboard through a hole in the shield. Note the color of the wire closest to the disk drive. Unplug the cable, then unplug the braided shield wire from the lug on the disk drive mounting screw. Remove the keyboard and set it aside.

3) You will remove the top shield next. There are three short Torx screws under the keyboard area, and one Torx screw on each side of the expansion port on your left. Remove these screws and keep them separate from the outer case screws. Look carefully at the top shield assembly. You should see several metal tabs that are sticking through slots in the shield and bent over. Bend the tabs straight up, then pull the shield straight up and set it aside.

3) Use Figure 1 as a reference, and find the board revision number and jumpers. If the board is 6a or higher, or if you see the jumpers, you can complete disassembly. Look also at the memory chip area. If you see only four chips with empty chip mounting areas between them, or if the silk-screened legend on the board above the chips says "512K/1MB RAM" or something similar, you can perform this conversion. If your board does not meet any of the above criteria, reassemble the computer. You will not be able to modify it using this method.

4) Loosen but do not remove the disk drive mounting screw that holds the tab where the keyboard shield wire was attached. Unplug the disk drive cables (power and data) from the motherboard, noting the orientation of the cables. Lift the drive straight up and set it aside.

5) Remove the motherboard and lower shield assembly from the bottom case. You will need to separate the bottom shield from

the motherboard. This is accomplished by using a nutdriver to remove all the jackscrews for the input/output port connectors at the motherboard's rear. Set the jackscrews aside, then remove the shield and the thin plastic insulating sheet between the shield and motherboard. Set them aside.

6) You will first remove the four existing 256KBx4 memory chips from the motherboard. Begin this process by clipping the chip leads flush with the chip body. This may seem wasteful, but unless you are well skilled, it is difficult to remove components from multilayer boards without damaging the PC traces. After clipping all the memory chip leads and removing the chip bodies, set the motherboard on its side and support it in a way that allows access to both sides of the board simultaneously. One by one, heat each clipped pin from the solder side of the board and pluck it loose from the component side with forceps or needlenose pliers. Do not hold the pin with the pliers or forceps while heating it. The tool will act as a heatsink and prevent the solder from melting.

7) Now you will need to remove the solder from the holes in locations U20-U23. This is best accomplished by using a heated desoldering gun. If you don't have one, use your soldering iron to heat each hole from the component side of the board, and use a pump-style, non-heated solder remover from the solder side of the hole. After removing solder from the chip mounting locations, clean out each pair of holes (marked as C20 through C23) below them.

8) Once the holes are open, solder one 20-pin IC socket into each location at U20, U21, U22, and U23. Align the notch on each socket with the silk-screened notch on the PC board. The use of machine-pin sockets is highly recommended, as they make better physical contact with each chip pin. After soldering the chip sockets into place, fill the PC board holes where the original memory chips were located with solder. This makes the job look cleaner and ensures good contacts for any feedthrough PC traces.

9) Solder a .33 uF capacitor into positions C20 through C23. Next, insert one 1MBx4 memory chip into each new socket. Align the notch on the chip with the notch on the socket.

10) Now you will change the jumpers. Locate the jumpers called out on Figure 1. These are actually PC pads etched into the board with thin traces connecting them. Changing the jumpers requires carefully cutting these traces and bridging the pads in their new configurations with solder.

11) Locate JP5 between Fat Agnus and the Kickstart ROM. It should look like the configuration in Figure 2-c. This jumper

changes pin 35 of Agnus from the _XCLK source to the _A20 address line. Cut the trace, shown in the figure by a solid line, with an X-Acto knife. Then bridge the pads shown by the dotted line. This is accomplished by heating both pads simultaneously with the soldering iron, then applying solder. The solder should bridge both pads.

12) Locate JP2 around pin 1 of the Kickstart ROM. This jumper changes the expansion RAM mapping. Cut the solid trace shown in Figure 2-a, and bridge the pads shown by the dotted line.

13) Locate JP3 between the RAM chips and the memory expansion connector. This set of jumpers reroutes the _RAS0 and _RAS1 lines. Cut the solid traces shown in Figure 2-b, and bridge the pads shown by the dotted lines.

14) Now you will install the 8372B chip. Refer to Figure 1 and your motherboard. The

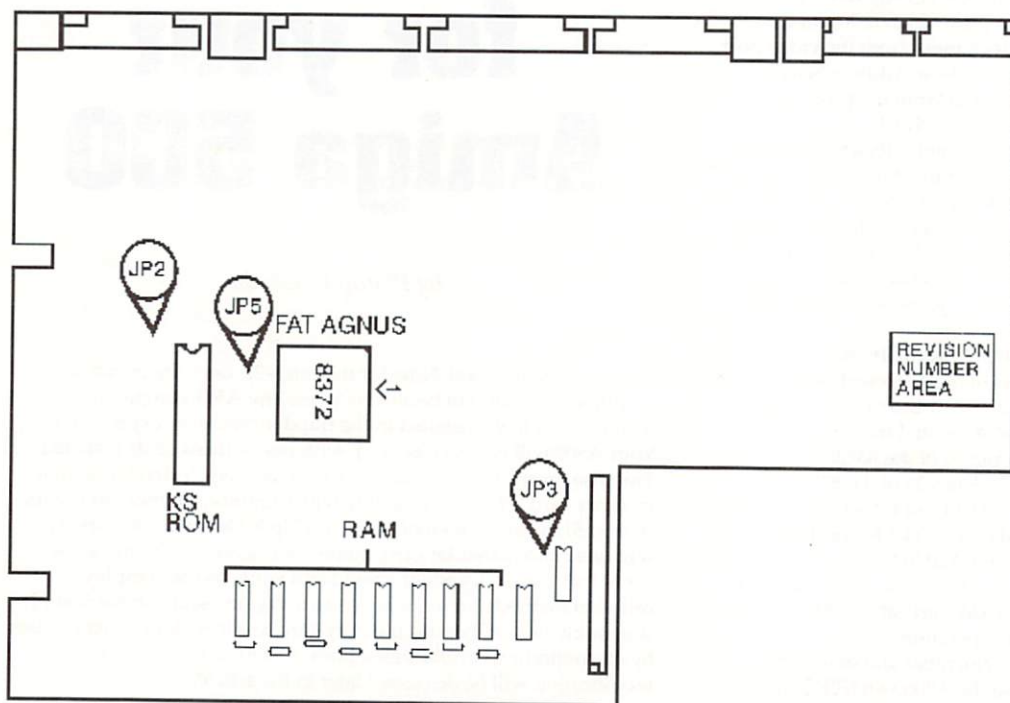


Figure 1.

number 1 and a "V" are silk-screened on the motherboard near the edge of the chip socket. By orienting the chip so that the writing on its surface is right-side-up, pin 1 will be on the top row of pins. Using a chip puller, carefully remove the original Fat Agnus chip. You should not attempt to remove this chip using anything other than a PLCC chip puller. Doing so could crack the PLCC socket, preventing the socket from making reliable contact with your new Agnus chip.

15) Now you will insert the new 8372B chip into the socket. This procedure requires extra care. Align the pin 1 edge of the chip with the silk-screened legend on the motherboard. Set the chip on top of the socket but do not apply pressure yet. Make sure that the pins on the chip are aligned with the slots on the socket, and ensure that the chip is not skewed or crooked. With the PC board sitting flat on the table, place your thumb squarely on the chip's center and push down. Use care but be firm. You should feel the chip seat, and it should be nearly flush with the socket's top. If it is slightly uneven, push down on the uneven side. If it is grossly uneven, carefully extract the chip with the chip puller. Inspect the chip leads to make sure they are not bent. Carefully straighten any bent pins, then try again.

16) Carefully check your work. Make sure there are no solder bridges between PC pads on the memory chip sockets. Verify that all the memory chips are inserted correctly, and that no pins were bent under the chip bodies. Also verify that the jumper connections were properly made.

17) Temporarily reinsert the motherboard into the lower shield, after placing the plastic insulator between them. Secure the shield and place the assembly into the lower case. Plug in the diskette drive and keyboard, carefully setting them into place without fastening them down. Make sure the power supply is off and plug it in, then plug in your monitor and mouse. Turn the power supply on. The computer should start as normal, displaying the Workbench hand or the 2.0 intro graphic. Insert a boot disk into the drive and continue the boot process. When you click on the disk icon and open a window, the menu bar should display a message stating there is approximately 1.8MB of free memory.

If the computer comes up with a green screen, this indicates a memory problem. This could be a solder bridge, poor solder connection, poor jumper connection, or a bad memory chip. Turn the computer off and recheck your work. Make sure the jumpers match Figure 2, and that the memory chips and the 8372B chip are properly seated in their sockets.

18) Once the computer boots properly, reverse the disassembly procedure in steps 1 through 4 with the following exception. Before putting the top shield on, replace the three disk-drive screws in the bottom case.

19) Your A500 now has 2MB of Chip RAM, but this modification makes the trapdoor memory expansion slot useless for A501-compatible RAM expander cards. This normally means the loss of your clock/calendar as well. However, you should be able to disconnect certain pins on the expander card's memory chips to disable the card's memory but allow clock/calendar use. If your card uses four 256KBx4 (20-pin) memory chips, you need to disconnect the PC traces leading to pins 4 and 17. If your card uses sixteen 256KBx1 (16-pin) memory chips, you will need to disconnect the PC traces leading to pins 4 and 15. These pins pass the $\overline{\text{RAS}}$ and $\overline{\text{CAS}}$ memory select signals from the A500.

All of the chips should have their pin 4s tied together, and, depending on the type of memory chips used, either pins 15 or 17 will all be tied together. You should be able, for each

set of pins, to cut one PC trace and disconnect all the matching pins. You also need to disconnect pin 32 on the card's expansion connector from ground. When this pin is grounded, it indicates to the A500 that an expansion memory card is connected.

Conclusion

Adding 2MB of chip RAM to your A500 will give it some much-needed breathing room. Not only will graphics and sound-intensive programs benefit, but some games will also take advantage of the extra memory to give you a richer playing experience. Most of all, by performing this modification, you can put some of your hard-earned cash toward other expansion options or software.

Special thanks to Jim Nevitt, who offered his A500 as the sacrificial lamb for the research on this article.

Table 1. Parts Needed

- (1) 8372B Fat Agnus Chip
- (4) 1MB x 4, 80nS or faster DIP-style DRAM chips
- (4) Machine-pin DIP sockets, 20-pin
- (4) .33 uF, non-polarized radial lead capacitors

•AC•

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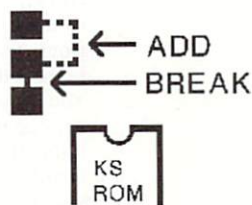


Figure 2-a. JP2

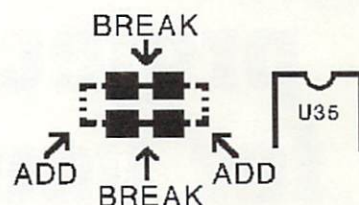


Figure 2-b. JP3

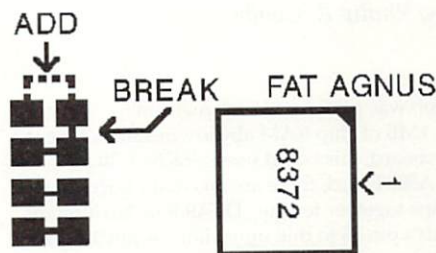


Figure 2-c. JP5

THE FAT A2000 A Chip RAM expansion project for your Amiga 2000

by Phillip R. Combs

The A2000 conversion was performed on a revision 6 motherboard with 1MB of chip RAM already installed. Like the A500 revision 6a motherboard, this board uses 256KBx4, 20-pin RAM chips. Unlike the A500 board, there are no circuit traces that tie pin 5 of the RAM chips together for the `_DRA9` line. No jumpers exist to reroute the 8372B's pin 56 to this signal line, or pin 35 to the CPU address bus A20 line.

This is easily remedied by adding the necessary traces with wire. To connect the `_DRA9` line, two jumper wires are installed. The first jumper wire connects pin 5 of the RAM chips, and the second jumper wire ties the first jumper wire to a connection point for the 8372B's pin 56. The CPU address bus A20 line connection is made by lifting the ends of two resistors from the motherboard, and running one jumper line. After replacing the eight existing 256KBx4

RAM chips with four 1MBx4 RAM chips, and swapping the 8372B 2MB Fat Agnus chip for the original 8372A, the conversion is complete.

The Conversion

The steps to convert your A2000 follow, but first, several cautions are necessary:

- 1) Place your A2000 on a level surface, such as a table. Ensure that the computer is sitting level before proceeding. This is important, as you will see in a later step. Remove the top of your A2000 case.
- 2) Next you will remove the drive/power supply platform.
- 3) If you have a card installed in the video slot beside the power supply, remove it now. If no card is installed, you should remove the slot cover from the back panel.
- 4) Look down into the chassis. Follow the power supply's wiring harness to the point where it plugs into the motherboard. Unplug this harness. Follow the floppy drive cable to the point where it plugs into the motherboard. Unplug this cable. If you have a hard disk installed, unplug its cable from the hard disk controller card. Remove the platform by tilting the front edge up, then lift it out and set it aside.
- 5) Refer to Figure 1. Locate the revision number on the motherboard, and look at the RAM chips. If the motherboard is revision 6 or above, or if the memory chips are 20-pin devices, you can complete the conversion. If neither of these conditions is met, you cannot convert your computer using this method.
- 6) Remove any expansion cards that may be installed and set them aside. Look at the motherboard and Figure 1. You should see 10 screws in the approximate locations shown in the figure. They should be easy to find, as each screw is located in the middle of a silver square on the motherboard. There are also two screws located on I/O port connectors—the disk drive connector at the rear of the case, and the mouse port at the front of the case. Remove these screws and set them aside. Look at the left side of the motherboard near the front panel. You should see a wire harness that plugs onto some pins there. Unplug the harness. Remove the motherboard from the case by tilting the front edge of the motherboard up, then lifting the board out.
- 7) Now you will need to remove the bottom shield and insulator from the motherboard. This is accomplished by first removing all the jackscrews from the I/O port connectors on the front and rear sides of the board. Then, place the board flat on the table with the mouse/joystick ports facing you. Flex the lip of the shield that covers those ports toward you and away from the ports. Tilt the front edge of the motherboard up, taking care that the ports do not catch on the shield. Lift the motherboard out of the shield, and set the shield and insulator aside.
- 8) You will first remove the existing 256KBx4 memory chips from the motherboard. Begin this process by clipping the chip leads flush with the chip body. After clipping all the memory chip leads and removing the chip bodies, set the motherboard on its side and support it in a way that allows access to both sides of the board simultaneously. Heat each clipped pin from the solder side of the board and pluck it loose from the component side with forceps or needlenose pliers. Do not hold the pin with the pliers or forceps while heating it. The tool will act as a heatsink and prevent the solder from melting.
- 9) After removing the RAM chips and leads, you will need to clean the solder from the holes at chip positions U501-U504. This is best accomplished with a heated desoldering gun. If you don't have one, you can heat each hole from the component side of the board, and remove the solder with a manual desoldering pump from the solder side of the board.
- 10) Next, install four, 20-pin IC sockets in positions U501-U504. Machine-pin IC sockets are highly recommended. Use the silk-screened legends on the motherboard as a guide. Insert

the sockets with the notch facing the same direction as shown by the legend. After installing the sockets, fill the empty holes at positions U505-U508 with solder, leaving U507's pin 4 hole unfilled for now. Filling the holes ensures that any feedthrough PC traces will make good contact.

- 11) Now you need to create the RAM_DRA9 address line by adding two jumper wires. Place the motherboard with the solder side up, and the joystick ports facing you.

- a) First, you will tie the pin 5s of U501-U504 together with 24-gauge bus wire. Begin by cutting a four-inch length of wire. Place one end of the wire against pin 5 of U502 (at the far left). Lay the wire against the board in a manner that allows it to pass between the IC pads and across the remaining three chips. The other end of the wire should touch pin 5 of U501. Tack-solder the end of the wire at pin 5 of U502.

- b) Measure and cut a piece of 1/16"-dia. heatshrink tubing long enough to cover the wire between U502's pin 5 and U501's pin 5. Allow a little overlap for shrinkage. Slip the tubing over the wire and slide it down to the solder joint at U502. Use a heat gun to shrink the tubing. Tack-solder the wire to U501's pin 5. Repeat this procedure to connect the wire from pin 5 of U501 to pin 5 of U504, and from there to pin 5 of U503. After soldering the wire at pin 5 of U503, clip off the excess wire.

- c) Next, you will run a jumper wire from the empty hole you left at pin 4 of U507 to pin 5 of U503. Measure the distance between the two points and cut a piece of bus wire around 1/8" longer than that. Bend one end of the wire into an "L" approximately 1/16" from one end. Insert this end into the hole at pin 4 of U507. Keep the wire parallel to the PC board, and lay it so the other end is against pin 5 of U503. Solder the wire at the hole.

Measure and cut a piece of 1/16"-dia. heatshrink tubing long enough to cover the wire between U507's pin 4 and U503's pin 5. Cut the tubing to length, allowing a little overlap for shrinkage, and slip the tubing over the wire. Slide it down to the solder joint at U507 and use a heat gun to shrink the tubing. Now tack-solder the wire's other end to U503's pin 5. This completes the new RAM_DRA9 address line.

- 12) Now you will add the jumper that connects pin 35 of the 8372B Fat Agnus to the CPU address bus A20 line. Place the board component side up, with the mouse/joystick ports facing you. You will need to disconnect two resistors, R110 and R212. Refer to Figures 1 and 2. You will heat the lead of each resistor shown by the X in the figure, then pull it free from the motherboard with forceps or needlenose pliers. Once the end is free, straighten the resistor lead. Measure and cut two pieces of 1/8"-dia. heatshrink tubing that are long enough

to cover the resistor and extend slightly past the end of the lead. Place one piece over each resistor and use the heat gun to shrink it. This will prevent the resistors from accidentally making contact with other components on the board. Remove the solder from the hole at R212, but fill the hole at R110 with solder. Push the resistors back down so they are parallel to the board.

Place the motherboard with the solder side up, and the mouse/joystick ports facing you. You will need to run a jumper wire from the empty hole at R212 to pin 36 of the Gary chip. Measure the distance between these two points and cut a piece of bus wire around 1/8" longer than that. Bend an "L" at one end of the wire around 1/16" from the end. Insert the bent end of the wire into the hole, and lay the wire on the motherboard with the free end against Gary's pin 36. Solder the end at R212. Measure and cut a piece of 1/16"-dia. heatshrink tubing long enough to cover the jumper wire between the two points. Allow some overlap for shrinkage. Slide the tubing onto the wire and use a heat gun to shrink it, then solder the free end of the jumper wire to Gary's pin 36. This completes the connection from pin 35 of the 8372B Fat Agnus to the CPU address bus A20 line.

- 13) Turn the motherboard component side up. You will now install the 8372B chip. Refer to Figure 1 and your motherboard. The number 1 and a "V" are silk-screened on the motherboard near the edge of the chip socket. By orienting the chip so that the writing on its surface is right-side-up, pin 1 will be on the top row of pins. Using a PLCC chip puller, carefully remove the original Fat Agnus chip. You should not attempt to remove this chip using anything other than a PLCC chip puller. Doing so could crack the PLCC socket, preventing the socket from making reliable contact with your new Agnus chip.

Now you will insert the 8372B chip into the socket. This procedure requires extra care. Align the pin 1 edge of the chip with the silk-screened legend on the motherboard. Set the chip on top of the socket but do not apply pressure yet. Make

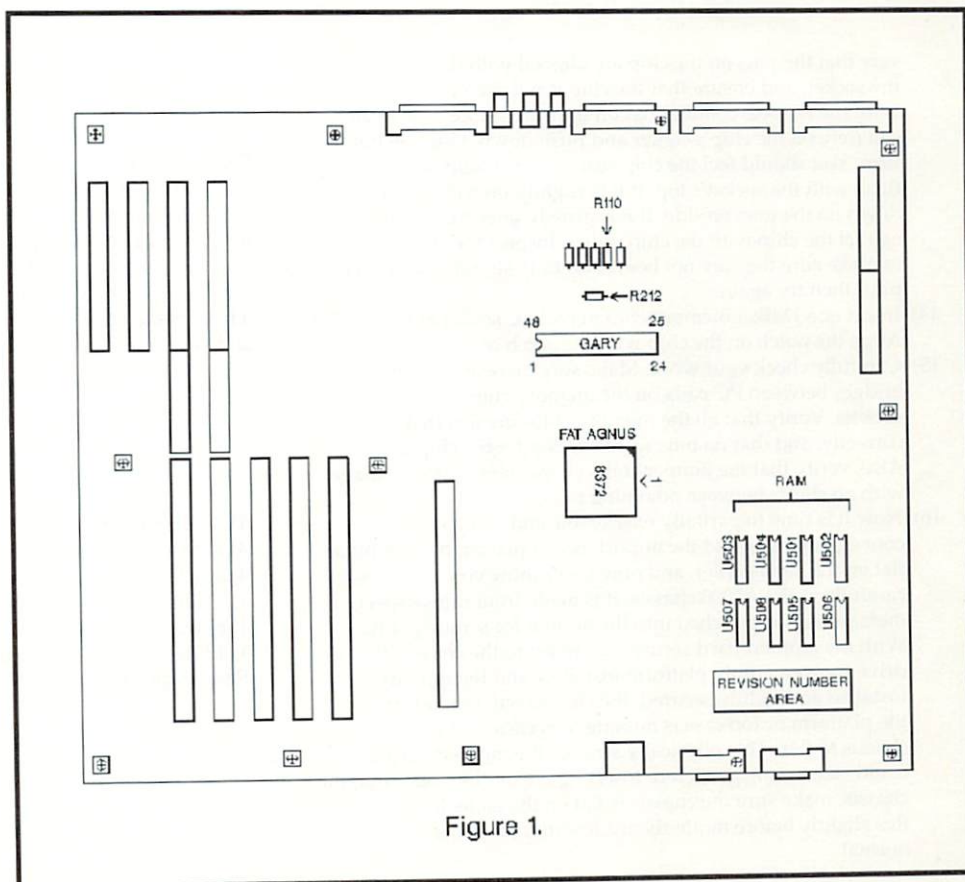


Figure 1.

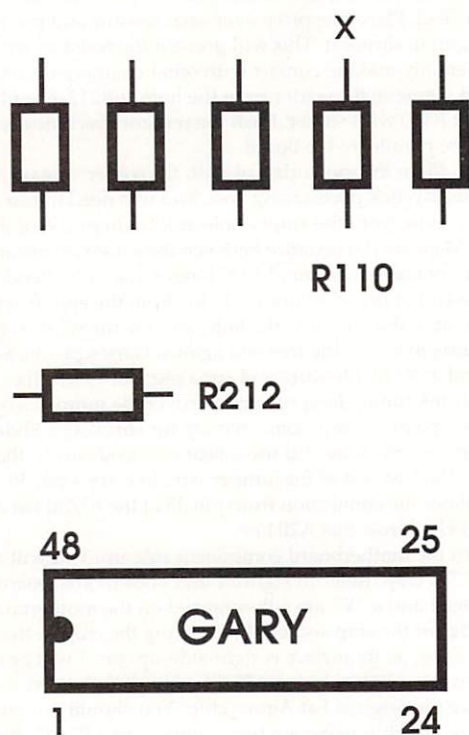


Figure 2.
Viewed from component side.

sure that the pins on the chip are aligned with the slots on the socket, and ensure that the chip is not skewed or crooked. With the PC board sitting flat on the table, place your thumb squarely on the chip's center and push down. Use care but be firm. You should feel the chip seat, and it should be nearly flush with the socket's top. If it is slightly uneven, push down on the uneven side. If it is grossly uneven, carefully extract the chip with the chip puller. Inspect the chip leads to make sure they are not bent. Carefully straighten any bent pins, then try again.

- 14) Insert one 1MBx4 memory chip in each IC socket at U501-U504. Align the notch on the chip with the notch on the socket.
- 15) Carefully check your work. Make sure there are no solder bridges between PC pads on the memory chip sockets. Verify that all the memory chips are inserted correctly, and that no pins were bent under the chip bodies. Also, verify that the jumper connections were properly made, with no shorts between adjoining pins.
- 16) Now it is time to partially reassemble and test your conversion. I stressed the importance of placing the computer flat on the table earlier, and now I will show you why. Look carefully at the A2000 chassis. It is made from flimsy sheet metal with ribs punched into the bottom for semi-rigidity. With the motherboard securely fastened to the chassis, the drive/power supply platform installed, and the top case installed and tightly secured, the chassis will not flex. If the platform or top case is missing, it is easier for the chassis to flex. This physically stresses the motherboard and could cause damage. Before inserting the motherboard into the chassis, make sure the chassis is flat on the table. It may flex slightly before motherboard insertion, but this is normal.

- a) Insert the motherboard back into the shield. This is best accomplished by inserting the back edge first, placing the I/O port connectors through the holes. Gently flex the shield's front edge that covers the mouse/joystick ports toward you, to allow the ports to clear. After the board is properly seated, straighten the shield by pushing the front edge against the ports. Fasten the shield in place by putting one jackscrew in any I/O connector on the back side and on the front side.
- b) Fasten the motherboard into the chassis with the appropriate screws. Reattach the wire harness to the front left corner of the motherboard. The two wires on the plug should be on the rear and middle pins. The pin nearest the front should not have a wire on it.
- c) Place the drive/power supply platform into the chassis. The edge of the platform under the disk drives and between the mounting ears has a lip on it. This lip goes into a matching slot on the chassis. The ears go outside the front panel. There are also two mounting lips on the back panel, and the bottom edge of the platform rests against them. Secure the platform. Plug the power supply harness into the motherboard. The ridge along one side of the connector faces away from the platform. Plug the floppy drive cable into the motherboard. Do not install any other cards at this time.
- d) Plug in the mouse, keyboard, power cable, and video monitor. Insert a boot floppy into DF0: and turn on the machine. It should boot as normal. Double-click on the floppy disk icon and open a window. You should see a message in the status bar reflecting around 1.8MB of free RAM. If you get a green screen, this indicates a memory problem. This could be caused by a bad solder joint, defective memory chip, incorrect or shorted jumper, or defective 8372B. Turn the A2000 off, check your work and correct any problems you discover.

Once you have determined that your conversion was successful, finish reassembling your computer.

Conclusion

Performing this conversion will not only add valuable chip RAM to your A2000, but it will save money and help stave off obsolescence. As newer Amiga models are introduced, the temptation to trade in your old computer will be great. Remember this: if you can upgrade your old machine to have the features you need at a reasonable price, you should do so. You will spend less money, and your initial investment will continue to pay off.

Parts Needed

- (1) 8372B Fat Agnus Chip
- (4) 1MB x 4, 80nS or faster DIP-style DRAM chips
- (4) Machine-pin DIP sockets, 20-pin
- (1) 6" length of 1/16"-diameter heatshrink tubing
- (1) 6" length of 1/8"-diameter heatshrink tubing
- (1) 12" length of 24-gauge bus wire, uninsulated (Radio Shack part number 278-1341)

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One Stop Music Shop

by Rick Manasa

By the time you read this, chances are you will have heard about *The One Stop Music Shop* from Blue Ribbon Soundworks. The folks at Blue Ribbon, in conjunction with E-mu Systems, are providing the technology behind the popular Proteus series of sound modules on a card that slips into an Amiga 2000, 3000, or 4000. This card has all the capabilities of a stand-alone MIDI module plus customized editing software, and hooks into the Blue Ribbon family of MIDI software. We recently got one of the two prototypes in our hot little hands to give you a taste of what this puppy will do. Here's what we found.

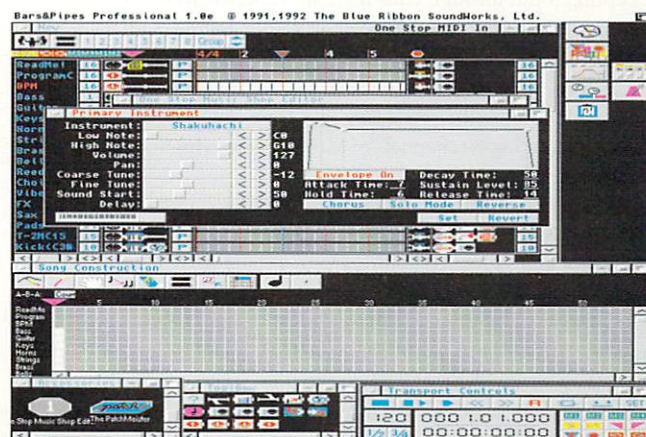
While One Stop Music Shop is based on the same sound engine that drives the Proteus modules, it is not a Proteus on a card. For example, there are only two outputs instead of six, there is no MIDI Thru port, the Program Preset Map is absent, and there isn't the instant visual feedback of a front panel display. However the existing common ground combined, with the up side of the tradeoffs, will more than make up for the lack of one-to-one compatibility. The One Stop Music Shop provides the same 16-bit samples, 32-voice polyphony, easy to understand architecture, extensive modulation controls, and many other features of the Proteus modules in an easy-to-install card for under \$650 retail. This is an astounding piece of computing and musical value and well worth the investment.

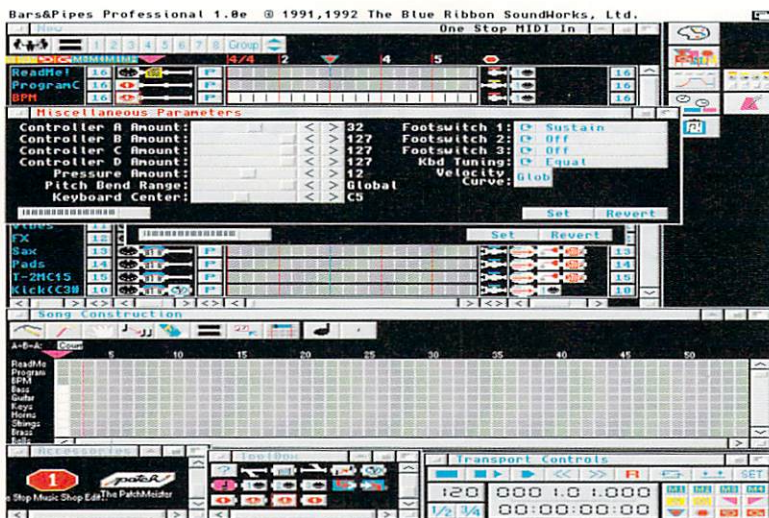
The One Stop Music Shop includes a built-in MIDI interface and editing software that installs as an accessory to *Bars & Pipes Professional*. You can run *SuperJAM! 1.1* through the One Stop Music Shop and use its sounds instead of *SuperJAM!*'s native TurboSound technology. *The PatchMeister* can get in the picture too, since the One Stop Music Shop can be accessed through the standard Proteus drivers available in the program. The final release version of the editor will come as a free-standing module as well.

The current version of One Stop Music Shop supports the General MIDI standard set of sounds. While this is not the same set of samples that Proteus users are familiar with, General MIDI support will make it easy to assign a standard set of sounds to your piece of music. Playing your MIDI music on another instrument that supports General MIDI will be a no-brainer, and will produce an accurate representation of what you intended. This will be especially helpful to the video professional, semi-pro, or amateur musician using, for example, *SuperJAM!* to create a music bed for a video project. You won't have to learn a lot about MIDI to get going, nor will you have to put up with those cheesy burps that the TurboSound technology passes off as musical instruments.

Blue Ribbon has graciously provided a program that will allow you to use the One Stop Music Shop with other Amiga sequencers or live directly from a MIDI keyboard or controller. You'll be able to hook the One Stop Music Shop into your standard MIDI interface at your serial port and have your non-Blue Ribbon software see it as a free-standing MIDI module. This will be great for those more familiar with *KCS*, *Music-X*, etc., who don't want to learn a new sequencing environment to take advantage of the One Stop Music Shop. I for one would rather hook up an AD516, the One Stop Music Shop, and all my Blue Ribbon software as accessories to B&P Pro and have at it. The audio possibilities are astounding.

While the One Stop Music Shop is aimed squarely at the audio-





for-video market, it is a serious synth and sample playback unit in its own right, with the full complement of editing features you'd expect from a stand-alone MIDI musical instrument. The One Stop Music Shop Editor gives you complete access to all the sound creation and modification parameters in an easy-to-understand format. This is at least partially due to the E-mu architecture, one of the most logical and well laid out in the business. When I say logical, I mean it makes sense. It's easy to follow how sounds are put together and how to make the kind of changes you want. This is not always the case with digital synthesizers. Everyone went crazy for the sounds the Yamaha FM-based synths could produce, but very few people felt comfortable making their own sounds on the DX-7. The concept behind Frequency Modulation synthesis just doesn't come easily to everyone. Not so with the Proteus family of instruments. A basic understanding of envelopes may be the only specialized information you'll need to modify and create sounds with The One Stop Music Shop. An in-depth discussion of all the ins and outs of the editing sounds with the One Stop Music Shop Editor is, unfortunately, beyond the scope of this article. Suffice it to say that you can easily modify any parameter of a sound with it.

There are four Tools that come with the One Stop Music Shop. The One Stop MIDI In & Out Tools send and receive MIDI data through the MIDI connectors on the card. The One Stop SoundEngine In and Out Tools send MIDI info to and from the sound-generating hardware and software of the One Stop Music Shop. This makes it possible to play the sounds on the card and to send and receive sound data from the Editor and The PatchMeister. What's more, it's possible to have one track in Bars & Pipes accepting input through your regular MIDI interface, one track listening to the One Stop Music Shop sound engine, and one track recording from the MIDI input on the One Stop Music Shop card. In effect, these tools add an additional 16 MIDI channels apiece to your system. If you use the *Triple Play Plus* from Blue Ribbon, you could have a staggering 80 channels of MIDI data moving in and out of your Amiga at one time!

Much of the release package is in various stages of development at this point, but such is the nature of reviewing a pre-release version of a product. Look forward to a standard MIDIfile player that will play MIDIfiles through the One Stop Music Shop under ARExx control. Multimedia presenters no longer need to bring a separate MIDI sound module to have high-quality sound accompany their slick videos. All the audio power you need will be neatly tucked away in the One Stop Music Shop. There is a PatchMeister

driver being created so you can organize your sounds easily. It appears that the PatchMeister Proteus 1 driver works just fine with the One Stop Music Shop sounds, so you'll be in good shape even if a dedicated driver never materializes (but it will). Some of the SuperJAM! implementation is clunky, but based on Blue Ribbon's track record, you can expect everything to be functioning properly before it is released for sale.

Being a Proteus owner I admit coming to the One Stop Music Shop with a set of audio expectations that weren't realized. I expected to hear all my favorite, familiar sounds pouring out of my Amiga. When I finally realized that the sounds were General MIDI and not the Proteus 1 set of sounds, I adjusted my expectations and found them quite acceptable, although different. The One Stop Music Shop provides sounds the standard Proteus doesn't have — clarinet, overdriven guitar, etc. — while some of the Proteus implementations of common sounds — French horn, acoustic guitar, etc. — are more appealing to me.

Blue Ribbon included a set of pages from the Proteus 1 manual with the review copy to help explain the sound architecture of the One Stop Music Shop. This shows how closely the products are related. In fact, rumor has it that E-mu may release versions of the One Stop Music Shop with the actual Proteus 1, 2, 3, and ProCussion module sounds, in addition to the current General MIDI module. Having two or three of these cards in your Amiga will put you right in the big leagues, with a very broad audio palette capable of matching the Amiga video and graphics strengths. Heady stuff.

So, bottom line, how does it sound? Quite nice, thank you. While I'm not completely enamored of the General MIDI spec, concept and sounds, I can't say I've heard a superior implementation of the standard. All the sounds are easily recognizable — you won't have to look up the sound list to see if you just played a trombone or a trumpet patch. While I might wish for a less frivolous name for the product and more computer keyboard control over the editing window, these are minor quibbles. I'd be quite happy to add the One Stop Music Shop as it is to my audio arsenal, without question.

If you have any interest in MIDI music, high-quality synth and sampled sounds, and don't want to get a free-standing MIDI module, get this package from Blue Ribbon. The sounds are first rate, the software is well designed and easy to use, and it all hangs together in the Blue Ribbon MIDI environment. Put your money down now, everybody. This is going to change the way you make music on your Amiga now and forever.

One Stop Music Shop
Blue Ribbon Soundworks
Venture Center
1605 Chantilly Drive Suite 200
Atlanta GA 30324
404-315-0212
Inquiry #206

Special Requirements: Amiga 2000, 3000 or 4000 with at least 1 meg memory

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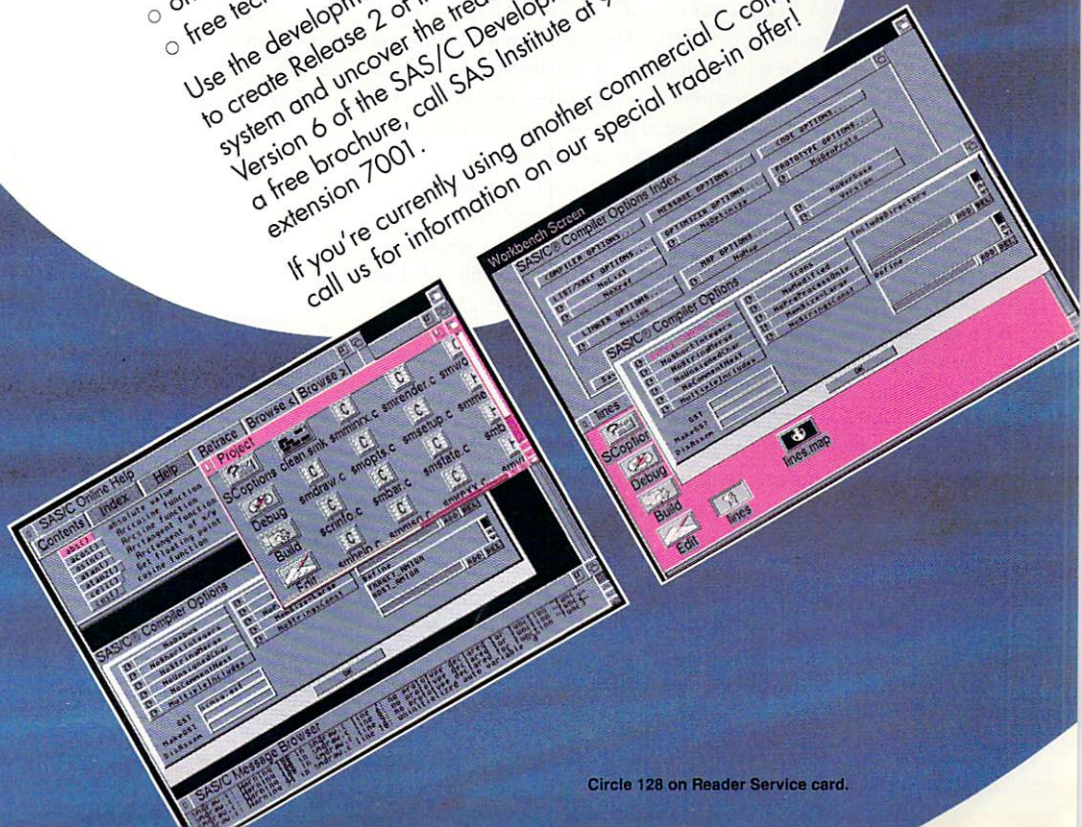
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Choice Amigas

From the innovative A600 to the ground-breaking A4000, each Amiga offers a unique solution

When Commodore introduced the Amiga 1000 in 1985, they set a standard by which all personal computers would be measured in the years to come. Ease of use, multitasking, power, speed, excellent graphics, and expandability were just some of the qualities Commodore introduced with the A1000.

The Amiga 500 brought improved power in a more compact design. Truly a personal computer. Designed for the home user, the A500 did not fail to live up to the standards set by its older brother. In fact it improved on those standards.

The release of the Amiga 2000 rounded out the Amiga line at that time and made it clear that the Amiga was the most powerful computer available. Unmatched power for graphics and video, unmatched ease of use in the operating system, true multitasking capabilities, and exceptional expansion possibilities brought workstation power to the desktop.

The Amiga 2000 is one of the more expandable Amigas. It comes standard with a Motorola 68000 processor, built-in floppy, and 1MB Chip RAM. It can be expanded to 2MB of Chip RAM and 8MB of Fast RAM. Accelerators are available for the A2000 from 68010 to a 68040 running at 50MHz. There is room for additional floppy drives and for the installation of hard drives or other SCSI devices. The A2000 also features four Amiga expansion slots, four PC expansion slots, and two special-purpose expansion slots. It is the primary choice of the Amiga video user and is instantly transformed into a professional video workstation with the installation of a video or graphics card such as the Video Toaster.

The Amiga 3000 features a Motorola 68030 microprocessor running at either 16- or 25MHz. It also includes a 32-bit data bus, 68881 or 68882 math coprocessor, built-in disk drive, 2MB RAM standard, and a 200MB hard drive. Expansion possibilities include four Zorro III slots, two PC AT slots, a video slot, and a CPU/CACHE memory expansion slot.

The Amiga 3000T features a high-speed Motorola 68040 microprocessor running at 25MHz. It also includes a 32-bit data bus, 68882 math coprocessor, built-in disk drive, 5MB RAM standard, and a 200MB hard drive. Expansion possibilities include five Zorro III slots, two PC AT slots, a video slot, and lots of room for floppy or hard drives.

With the recent release of three new models to the Amiga line, Commodore has once again redefined the standard by which the

personal computer is to be judged. Advanced graphics capabilities, amazing speed, and improved operating systems push these new Amigas to the front of the personal computer pack.

The Amiga 4000 is the first member of an all-new generation of Amiga multimedia computers. With the introduction of the Advanced Graphics Architecture Chip Set, the Amiga 4000 sets new and affordable benchmarks for exciting graphics, animation, and video. The A4000's features include the AGA chip set, 256,000 simultaneous color from a palette of 16.8 million available, hardware scan doubling for flicker-free display, and upward compatibility with the Enhanced Chip Set.

The Amiga 1200 is Commodore's newest personal computer which uses the new AGA chip set. The A1200 is a lower cost member of the versatile and powerful Amiga 4000 family. The A1200 has an impressive number of video display outputs including RGB analog and digital, VGA, color composite, and RF modulated. The AGA hardware enhancements provide smooth display updates and crisp, clean characters without jaggies. The A1200 also features 256,000 simultaneous colors, backward compatibility with the Enhanced Chip Set and 8-bit digital sound.

The Amiga 600 is an advanced and powerful personal computer in a newly designed compact, low-profile case. Some of the Amiga 600's features include an external PCMCIA expansion connector, optional IDE hard drive, and a compact design.

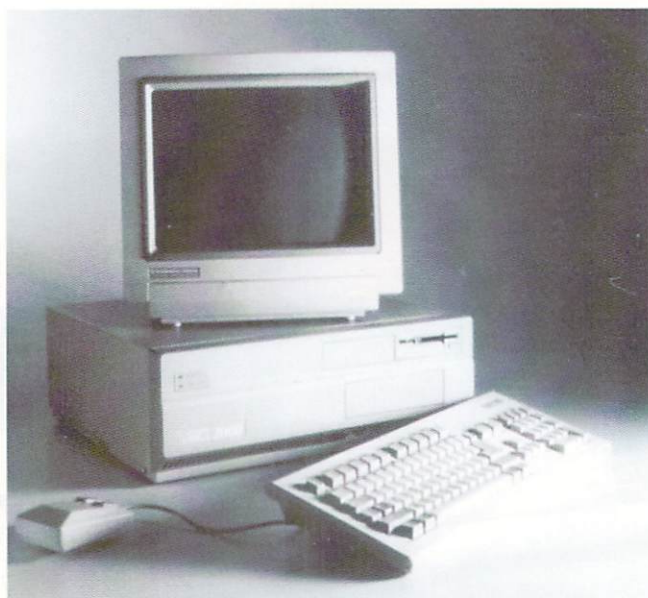




Total Amiga power comes in compact packages with the A600 and the A1200.



	CPU	memory	software
A600/ A600HD	<ul style="list-style-type: none"> • Motorola 68000 16/32-bit • 7.16MHz NTSC • Multi-Chip coprocessor system for DMA, Video, Graphics, and Sound 	<ul style="list-style-type: none"> • Expandable to 2MB of Chip RAM • Maximum RAM expansion 6MB with PCMCIA 	<ul style="list-style-type: none"> • 512K ROM • AmigaDOS Release 2 • Workbench 2.x and Utilities
A1200	<ul style="list-style-type: none"> • 14.32MHz 68EC020 NTSC • 32-bit data path • 24-bit address space 	<ul style="list-style-type: none"> • Up to 2MB 32-bit Chip RAM • Optional Battery Backed real-time clock • Internal 150-pin CPU-slot edge connector • Supports PCMCIA standard 2.0 memory and I/O cards • System can support 10MB 	<ul style="list-style-type: none"> • 512K 32-bit ROM, can support 2MB • Includes PCMCIA code • AmigaDOS 3.0 • Supports programmable resolutions • Supports outline fonts • Localized for multiple languages/countries • CrossDOS MS-DOS file transfer utility
A2000	<ul style="list-style-type: none"> • Motorola 68000 16/32-bit • 7.13 MHz clock 	<ul style="list-style-type: none"> • 1MB RAM standard • Internally expandable up to an additional 8MB 	<ul style="list-style-type: none"> • 512K ROM • AmigaDOS Release 2 • Workbench 2.x & utilities
A3000/ A3000T	<ul style="list-style-type: none"> • A3000: Motorola MC68030 32-bit processor—16 or 25MHz clock speed • A3000T: Motorola MC68040 32-bit processor—25MHz clock speed, 68882 math coprocessor 	A3000 & A3000T: <ul style="list-style-type: none"> • 1MB Chip RAM expandable to 2MB • 1MB FastRAM standard expandable to 16MB • 4MB Fast RAM standard on 100MB hard disk models 	<ul style="list-style-type: none"> • 512K of 32-bit ROM • AmigaDOS 2.x • Supports programmable resolutions • Supports programmable fonts
A4000	<ul style="list-style-type: none"> • Motorola 68040 series 32-bit processor • 25MHz clock speed • Removable processor module 	<ul style="list-style-type: none"> • 2MB 32-bit Chip RAM • Up to 16MB 32-bit Fast RAM • Easily expandable with standard SIMM modules 	<ul style="list-style-type: none"> • 512K 32-bit ROM • AmigaDOS 3.0 • Supports programmable resolutions • Supports outline fonts • CrossDOS/MS-DOS file transfer utility
CDTV	<ul style="list-style-type: none"> • Motorola 68000 	<ul style="list-style-type: none"> • 1MB RAM expandable with Personal Memory Card 	<ul style="list-style-type: none"> • CD based • AmigaDOS available (with optional floppy drive)



	drives	graphic modes	display output
A600/ A600HD	<ul style="list-style-type: none"> • Built-in 3.5-inch 880K floppy disk • External 3.5-inch floppy disk • Internal IDE hard disk (optional) 	<ul style="list-style-type: none"> • Color palette of 4096 colors • Selectable resolutions • Supports full overscan 	<ul style="list-style-type: none"> • RGB analog 15KHz horizontal • Color Composite • RF modulated
A1200	<ul style="list-style-type: none"> • Built-in slimline 3.5-inch disk drive (880K formatted) • Optional 2.5-inch form factor IDE hard Disk Drive • Hard Drive models pre-formatted and pre-loaded with system software and utilities 	<ul style="list-style-type: none"> • AGA custom chip set produces resolutions ranging from 320x200 to 1280x400 • NTSC and PAL video resolutions • Color palette of 16.8 million colors • 2 to 256,000 user-definable colors 	Video Display Output <ul style="list-style-type: none"> • RGB analog, VGA or Multiscan • Horizontal scan rates 50Hz - 72Hz • Vertical scan rates 50Hz - 72Hz • NTSC color composite output • RF output for standard TV
A2000	<ul style="list-style-type: none"> • Built-in 3.5-inch disk drive (floppy) • AmigaDOS supports 4 floppy drives in any configuration simultaneously • Internal Options: 5.25" Half Height • External Options: 2 Amiga floppy drives 	<ul style="list-style-type: none"> • Numerous modes ranging from 320x200 non-interlaced to 1280x400 interlaced • Productivity mode of 640 x 480 non-interlaced 	<ul style="list-style-type: none"> • 400 Lines/vertical frequency 60Hz • Graphic coprocessor with beam synced draw, fill and move modes • 4096 colors
A3000/ A3000T	<ul style="list-style-type: none"> • Built-in 3.5-inch disk drive • 100MB hard drive (A3000T) • 50MB hard drive (A3000) • Pre-formatted and pre-loaded with system software and utilities • 5 externally accessible device ports (A3000T) 	<ul style="list-style-type: none"> • User definable resolutions • Palette of 4096 colors • 2 to 4096 colors displayable on screen 	<ul style="list-style-type: none"> • Non-interlaced low resolution • Interlaced high resolution • De-interlaced high resolution • Works with RGB analog or VGA multi-scanning monitors
A4000	<ul style="list-style-type: none"> • Built-in 3.5-inch high-density disk drive (880K - 1.76MB formatted) • Hard drive models pre-formatted and pre-loaded with system software and utilities • Two rear and two front 3.5-inch drive bays • One front 5.25-inch drive bay 	<ul style="list-style-type: none"> • AGA custom chip set • NTSC and PAL video resolutions • Color palette of 16.8 million colors • 2 to 256,000 user-definable colors displayable on-screen 	<ul style="list-style-type: none"> • Works with RGB analog or VGA multiscan monitors
CDTV	<ul style="list-style-type: none"> • ISO-9660 compatible CD-ROM drive • Optional 3.5-inch external floppy drive 	<ul style="list-style-type: none"> • Palette of 4096 colors • NTSC and PAL resolutions 	<ul style="list-style-type: none"> • RF Modulated • Color composite • S-video out



Opposite page, left: The Amiga 2000 can quickly become a high-end video workstation. Opposite right: The Amiga 3000 offers the professional the speed and agility needed for quality presentations, graphics, and animation. Left: The Amiga 4000 is the first model of the next generation of Amigas. Right: The Amiga 3000T turns the Amiga into a professional tower system.

slots	sound	power	interfaces	
<ul style="list-style-type: none"> • PCMCIA card interface • RAM expansion 	<ul style="list-style-type: none"> • Four-voice, 2-channel stereo sound 	<ul style="list-style-type: none"> • Switching power supply 23 watts 	External <ul style="list-style-type: none"> • Floppy disk (DB23) • Mouse/joystick/lightpen (2 DB9) • Serial (RS-232, PC compatible) • Parallel (Centronics- PC Compatible) 	
CPU Expansion Bus <ul style="list-style-type: none"> • 150-pin Local Bus edge connector • High-speed 32-bit RAM expansion • Coprocessor expansion • CPU accelerators 	<ul style="list-style-type: none"> • Four-voice, 2-channel stereo sound 	<ul style="list-style-type: none"> • 110 volt/60Hz 23 watts • External power supply 	<ul style="list-style-type: none"> • Keyboard • Mouse/joystick/lightpen ports (2) • Serial (RS-232) • Parallel (Centronics) • Video (RGB Analog or digital) • Color Composite or RF Modulated 	
<ul style="list-style-type: none"> • Amiga CPU bus: 1 • Amiga System Bus: 5, 100-pin with AUTOCONFIG feature • PC Bus: 4 • For internal NTSC/PAL encoder for composite video, internal genlock, etc. 	<ul style="list-style-type: none"> • Four-voice, 2-channel stereo sound 	<ul style="list-style-type: none"> • 110 volt/60Hz 360W Power Supply for base machine and extensions 	Interfaces <ul style="list-style-type: none"> • Keyboard • Mouse, joystick, lightpen ports (2) • Serial (RS-232) • Parallel (Centronics) • Video (RGB analog or digital) • Right & left audio • External disk drives • Monochrome video 	
System Slots <ul style="list-style-type: none"> • CPU Slot (200-pin) supports 32-bit data cache memory cards and/or advanced processors • Amiga system bus: Four 16/32 Zorro III expansion slots (A3000T: 5 slots) • PC bus: 2 PC AT slots • 1 RGB analog and digital 12-bit video slot 	<ul style="list-style-type: none"> • Four-voice, 2-channel stereo sound 	<ul style="list-style-type: none"> • 110v/60Hz 280w, switching power supply (A3000T) • 110v/60Hz 135w power supply (A3000) 	<ul style="list-style-type: none"> • Keyboard • 2 mouse/joystick/lightpen ports • Serial (RS-232) • Parallel (Centronics) • 15.75KHz Video (RGB analog or digital) • Right and left audio • Internal and external disk drive ports • Internal and external SCSI ports 	
<ul style="list-style-type: none"> • CPU slot (200-pin) supports high-speed memory and advanced processors • Amiga system bus: Four 16/32-bit Zorro III expansion slots • PC bus: Three PC AT slots • Extended 24-bit video slot 	<ul style="list-style-type: none"> • Four-voice, 2-channel stereo sound 	<ul style="list-style-type: none"> • 110v/60Hz 150w power supply 	<ul style="list-style-type: none"> • Keyboard • Mouse/joystick/lightpen ports (2) • Serial (RS-232) • Parallel (Centronics) • Video (RGB analog or digital) • Right and left stereo audio • Internal and external floppy disk drive ports • Internal AT IDE port, Optional SCSI adapter 	
<ul style="list-style-type: none"> • Personal memory card adapter • Video slot for optional genlock 	<ul style="list-style-type: none"> • Four-voice, 2-channel stereo sound 	<ul style="list-style-type: none"> • 110-240v—50/60Hz 30w power supply 	<ul style="list-style-type: none"> • Keyboard • Mouse/joystick/infrared controller • Serial port • Parallel port • RGB video • Floppy disk controller • MIDI in/out 	

The strengths of the Amiga 1000 and the A500

A look back

The Amiga 1000 was a revolutionary computer when it was launched in 1985. Its counterpart, the A500, introduced in the spring of 1987, has also left its mark on personal computing. These units are gone from Commodore's current production lists, but they are not forgotten. The Amiga 500 stands as the best selling Amiga of all time. Its popularity is likened to that of the C-64. Not to worry, support for this little wonder will be around for a long time to come from third-party developers.

Efforts to keep the A1000 alive as long as possible have been abundant. The most recent attempt at expanding the A1000 is the Phoenix Board from Phoenix Microtechnologies. This is a replacement board for the A1000 motherboard. It adds 2MB of Chip RAM, an A2000 expansion slot, A2000 Video Slot, AutoBooting SCSI controller, and a host of other features. Hundreds of other items are available for the A1000 to allow for ultimate expansion.

The A500's survival is well insured by the thousands of products available which specifically target the machine. Internal and external hard drives, Fast and Chip RAM expansion, accelerators, and more. Special expansion cases and "mimi-tower" cases have popped up, which let you have unlimited expansion capabilities for your A500. With an expansion case such as the HiQ A500 Tower from INOVAtrionics, you have the room to add 10 half-height drives and a 250-watt power supply to your A500. It also allows you to use any A2000 hard disk controller, RAM expansion card, accelerator, or Bridgeboard. It even has a video/graphics expansion slot that allows the use of the Video Toaster!

Seeing the future

Like Commodore's C-64, the Amiga 500 and 1000 will both be around for a long time. While the new Amigas are breaking ground with their variety of improvements, the A500 and A1000 will definitely hold their own. Their broad user base will keep them in the minds of many third party Amiga developers. Who knows, perhaps someday someone will find a way to bring Amiga 4000 technology to the beloved 500 and 1000.



Commodore set new standards for personal computing excellence with the introduction of the A1000 (above) in 1985. The release of the Amiga 500 (below) brought the exceptional computing power of the Amiga to the home user in a compact design.



ARexx

Demystifying ARexx:

What Is It?
Should I Learn It?
Is ARexx Hard to Learn?

by Merrill Callaway

February marks the first anniversary of this ARexx column. Perhaps this is an appropriate time to skip the "program of the month" and round up some new converts to ARexx by mentioning just a few of its elegant and powerful features, and by describing some of the things we need to learn about a computer language before we can program in it. Those of us who use ARexx know that it is arguably the most important single thing that sets the Amiga apart from other platforms, and we are excited about that. This month, I hope to stimulate appreciation for ARexx in those of us who know it, and to impart some of that excitement to those of you who may not even know what ARexx is, much less feel a need to use it. For example, someone at a World of Commodore show asked me if ARexx was a special chip. Before you laugh, keep in mind that we all started out knowing nothing, and those of us who advanced in our knowledge did so by asking questions, and by reading and rereading material that was "over our head" until the light dawned. I don't believe there are any dumb questions, and I took just as much care explaining what ARexx is to that individual as I do discussing its more abstruse qualities with experts. We are all learning.

What Is ARexx?

ARexx is a programming language. With it, you may write all sorts of utilities, routines to customize your application programs or your operating system, or even complex interprocess control applications in which several Amiga programs coordinate and process data via ARexx remote control. "Oh, no!" you say, "I'm not a programmer!" Please read on. ARexx doesn't resemble most novices' preconceived notions of

computer languages, with yards of inscrutable gibberish scrolling off the screen. ARexx is modern and powerful, yet remarkably easy to understand and use. One of the main design criteria at the creation of its parent language, Rexx, in the mid 80s was that it was to be a language easy for "everybody" to use—no kidding. The original Rexx was created by Michael F. Cowlishaw at the IBM UK Laboratories, Ltd. for use on IBM main-frame computers around the world. William S. Hawes translated, or, in computer jargon, "ported," Rexx to work on the Amiga soon after Rexx had been invented, and named his derivative ARexx, for Amiga Rexx.

About Power

For years, the Amiga was the only PC that had true multi-tasking, or the ability to run several programs simultaneously. The Amiga was the only PC to which it made sense to port a main-frame language like Rexx. Lately, there has evolved a PC-Rexx version for IBM's OS2 multi-tasking operating system, but there are no



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programs yet to take advantage of the interprocess control capability of Rexx on the IBM PC as there are on the Amiga where most developers are behind the effort to install "ARexx support" on new software. Because of its de facto "standardization" added to the multi-tasking power of the Amiga, ARexx is arguably the best and strongest implementation of Rexx anywhere. ARexx retains all of the features of the original main-frame Rexx, plus it implements entire sets of additional functions through shared libraries of functions, which may be loaded at your discretion. For example, there is a graphical user interface (GUI) library called `rexarplib.library` by Willy Langeveld, available free of charge, that allows you to open windows, gadgets, requesters, and use most of the features of Intuition, the Amiga GUI. The parent language Rexx, by comparison, has no graphical capability whatsoever. In ARexx, all you have to do is load this library using one line of code, and then all its window and gadget functions are available to your program. Auxiliary libraries may also be loaded from your startup-sequence, and they will "sleep," that is, not take up any system resources, until needed by any of your programs. The unique nature of the Amiga and its superior operating system make an ideal environment for Rexx programming. Maybe picking a language to program in isn't your problem; you're simply afraid to program in any language. Let's look at that problem.

Overcoming Fear of Programming by Studying Jargon

We seldom analyze it, but those considered "outsiders" to every field of endeavor, every hobby and sport, suffer from what I'll call "exclusion by jargon." To enter into just about anything, one must learn a new language. That's what jargon really is: a new syntax, grammar, and vocabulary that we have to learn before we can understand anyone who talks or writes about our new subject of

interest. That can be intimidating, because no one wants to appear stupid. In professions, this jargon takes on a downright mystical air, and in hobbies and sports it may take the form of intricate or humorous slang. Jargon means job security. Jargon is social group identity. Jargon lets you feel important through pontification. Jargon has roots in medieval craft guilds which protected members through arcane knowledge, rites, and special terms and techniques. Computer technology is no exception, and it is riddled with special terms and arcane knowledge, not to mention entire programming languages. Lest you think computer programming alone suffers from opaque nomenclature, look at three random disciplines and a few of their unique terms. Motorcycle racing: endo, roost, ISDE, moto, head-shake, whoops. Aerospace: LSAR, ATE, shake 'n bake, QA, Mil-std. Model Railroading: HO_n3, TT, O gauge, turnout, pike, brass hat. The list is endless. My point is that programming in ARexx is not uniquely difficult and may be readily learned once we demystify its jargon somewhat and explain a few "obvious" things that may not be so obvious to beginners. ARexx unlocks the true power of your Amiga. Until you begin to experience ARexx and use it, you literally don't know what you are missing.

What Is an ARexx Program?

Programmers don't use word processors, because they add invisible formatting commands that spoil the program's operation. You make an ARexx program in a text editor and save the file in the `System:Rexx` directory as plain ASCII text. You should assign Rexx: (usually in your startup-sequence) to the directory in which you keep your ARexx programs in order for things to work. The line should look like this at a shell prompt `> assign Rexx: system:rexxc` [press Rtn key].

Assuming you have entered your program source code correctly, and saved the file in the assigned Rexx: directory, the file is now ready to run as an ARexx program. That is why you sometimes see ARexx called a script or scripting language: all programs start out as, and remain ASCII script files. ARexx uses another program, called an interpreter, to process the file you've just saved by executing the program one instruction at a time. You generally name your program with a qualifier ".rex" on the end. Pretend you named it "MyPgm.rexx". To run it, just open a shell, and at the prompt, type this: `rx MyPgm` [press Return key]. If you have an extension ".rex", you don't need to type this in. The ARexx interpreter program—in ARexx jargon, the resident process—is named `rexcmast` and must be started before you can run any ARexx program using the ARexx command utility, `rx`, which we use to launch ARexx programs. It's best to run `rexcmast` in your startup-sequence, as it runs transparently in the background waiting for `rx` to give it a program to interpret, and doesn't use system resources such as memory until it needs them. ARexx is sometimes called an interpreted language. Its programs are sometimes called ARexx scripts, or ARexx macros.

Interpreted Languages and the Future

Interpreted languages do the best job of mimicking the way humans communicate, one word or sentence at a time; and they are the easiest to program in, because the code is human-readable and accessible. The other kind of computer language is called a compiled language. In it, a compiler plus a linker program turn your ASCII file into machine-readable-only 0's and 1's or binary code, adding several layers of complexity to your efforts. It used to be that everyone used compiled languages because interpreted languages were "too slow." Although compiled languages do run faster, the blistering speed of the newer processors can make the runtime

speed difference small in comparison to the very real difference in the time and therefore overhead for program development. There is even a number of companies developing commercial software using interpreted languages such as Rexx or ARexx and their number is increasing. They would have been considered heretical just a few years ago. In fact, some of my more conservative computer friends would hiss "Heresy!" now. It's going to happen, however, that much of applications programming will come out of the hands of the few and into the hands of everyone, just as the personal computer revolution stole the thunder of the main frame digit-heads and spread creativity around like wildfire. Compiled languages and programs will not disappear by any means. It's just that universal script languages like ARexx will allow end users to readily tweak their programs to exactly what they need, and companies will spring up exclusively to develop script macros for them. The kind of language that gives programming power to everyone is inevitably a high-level interpreted language. ARexx is quite capable of large, robust applications as well as small "quick and dirty" utility programs. There are millions of lines of Rexx code in daily use on IBM main-frame computers. There are probably millions of lines of ARexx code by now as well. Anyone who tells you an interpreted language is somehow "inferior" is trying to protect their job or their status as a "computer whiz." Times are changing.

you program N to be an integer throughout the program. It may not change to floating point—a number with a variable "floating" number of decimal places—and certainly cannot change to the text string "roast beef" or your program will either not compile or it will crash. What puts ARexx at a higher level than this?

ARexx uses typeless variables. They may change types on the fly as often as you wish. You never need to declare them. If you need to have $N = 5$ in one place, change to 3.456 in another, and finally wind up as the answer, "roast beef," then that's OK by ARexx, unless you try to do a bogus calculation such as divide "roast beef" by 5. Then you'll make a hash of it and get an error message. The trade-off is that ARexx could possibly let you do meaningless or strange things, but overall you'll reap a large savings in time and convenience, by not having to declare variables. There are many other reasons ARexx is considered high level, but its handling of arrays is one of the best.

Suppose you have an array or matrix of many rows and columns of variables. Imagine that this article is an array. Each line has so many words and each word has so many letters. You could have line 299, word 5, letter 6 for instance: a three-dimensional array. Now suppose you want to initialize that array by making every line, word, and letter a space. As an exercise, try doing this in C! In ARexx it is a one-instruction situation. We'll call our array LINE. (Note the period). The period represents the syntax—where

ARexx is a programming language. With it, you may write all sorts of utilities, routines to customize your application programs or your operating system, or even complex interprocess control applications in which several Amiga programs coordinate and process data via ARexx remote control.

ARexx Is High Level

ARexx is the best language for fully featured, easy-to-use programming accessible to anyone, not simply because it is interpreted, but because it is a very high-level language. A high-level language is one which accomplishes the most with the least input from the user without sacrificing flexibility. In other words it has a high level of abstraction or removal of the programmer from what is going on in the actual machine hardware. At the lowest level, we have machine language. Binary code cannot go any lower as a language. The 1's and 0's represent one-for-one actual high and low voltages in the chip circuits. There is only one level of abstraction between the language and the electricity actually moving in your computer: 1=high voltage and 0=low voltage.

Assembler language is "higher" than machine language in that commonly occurring strings of 0s and 1s are abstracted into somewhat mnemonic words made with letters and numbers that represent doing very elementary things such as putting a number into a certain register—part of the hardware used to store information temporarily.

Compiled languages such as C come next. They are capable of doing things on a higher level such as calculating expressions using symbols for the variables and operators. But each variable must be typed or declared before the program will compile. For example,

to put punctuation—of an array. Every new dimension, we simply add another period. The base name of the array, LINE plus the first period (LINE.), ARexx calls a stem symbol token. The compound symbol token (LINE.299.5.6) then becomes the unique name for the particular letter in the article in the example above. The instruction to initialize every element of LINE. to a space no matter at how many dimensions is simply: LINE.= " " which is pretty high level if you ask anyone who has tried this in another language! We ARexx programmers need not concern ourselves with what is going on deep in the Amiga; ARexx takes care of it, freeing us to concentrate on developing our applications. A high-level language eliminates the need for us to continually reinvent the wheel, or to study computer science before we can make a simple program. One must still know something about languages, however, in order to become an effective programmer. Let's look at some of the basics of mastering any language, no matter what kind.

Similarities Between English and ARexx

We need several technical terms to describe every human language. The same terms apply to all computer programming languages as well, and are germane to your understanding of them.

We all know what a vocabulary is. It's the set of words we use to symbolize ideas. A person with a "big vocabulary" knows many

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words and theoretically can communicate better than a person with a smaller vocabulary, but anyone who has studied a foreign language knows that there is a core vocabulary which we cannot do without unless we wish to be verbally handicapped.

ARExx can process instructions, and a core group of functions, which make up an ARExx programmer's "core vocabulary." Shared libraries add richness and complexity to this core vocabulary by augmenting the set of functions available. ARExx can also process commands, a special class of program statements used to communicate with and control other separately running programs called host applications. Command processing is what really sets ARExx and therefore the Amiga apart from other languages and platforms. The ultimate "vocabulary" of ARExx, and therefore its power, is unlimited, since it may access and thus inherit all the power of any host application it communicates with.

Since we humans use words, numbers, and names as symbolic objects in our spoken language, ARExx does the same, but ARExx has a more logical approach to naming these tokens as it calls them. As a beginner to ARExx, you will have some difficulty getting the new terminology straight, but once you learn it, you will appreciate its unambiguous beauty and economy. Semantics relates to the actual meaning of words, and it is for reasons of consistent semantics—rather than jargon—that Michael Cowlishaw named the ARExx tokens so rigorously. When you use correct ARExx terminology, there is never doubt as to what you mean, except perhaps to an outsider!

In every language, syntax is the set of rules governing the placement of words and punctuation in a sentence, sentences in paragraphs, and paragraphs in a larger context. Syntax is the key to

controlling other programs with ARExx, through the special syntactical class of ARExx statements called commands. These are lines of code distinguished by their syntax in a program. Depending on the situation, they are distinguished by quote marks and/or their placement in the program context. Commands represent remote control instructions sent to another running program through its ARExx port or the equivalent term ARExx Host Address. Remarkably, commands have no meaning whatsoever to the ARExx interpreter, rexxmast! The command interpreter inside ARExx is high level, however. It recognizes this "meaninglessness" and passes the command—which is just an ASCII string—to the ARExx Port of a host application, where the command is received and acted upon. ARExx ports are programmed in at development to be an integral part of the application program itself. A command does have meaning within the host application to which it is sent. A program said to have "ARExx support" has been programmed to be capable of receiving, acting on, and replying to these commands through its ARExx port. The command interpreter inside ARExx acts just like the postal service, maintaining a current and former host address, as well as a default address. Any commands encountered by ARExx are sent to the current host address. Remember how the postal service holds you responsible to put the correct address on your mail? It is up to you, the ARExx programmer, to make sure that the proper address is specified for any commands sent by your ARExx program. Otherwise, you'll get an error message in the form of a "host address not found" message, quite similar to a "return to sender" on a mis-addressed letter.

We must also master grammar before we can speak any language well. Grammar overlaps somewhat with syntax, as it has to do sometimes with the placement of words such as subjects and objects, but it also deals with the correct choice of words themselves, as when we choose the proper form of a verb. ARExx grammar is very much like English grammar. For instance, there is no weirdness such as the Last In First Out (LIFO) stack used in the page description language PostScript where everything seems to go together backwards. One of the best things about ARExx is the English readability of its finished code. It was designed for humans and not hardware. Conditional statements, looping, and assignments of values are all straightforward and intuitive.

One of the features of ARExx "grammar" that I enjoy the most is its ability to evaluate expressions. In a single expression on one line, you may mix literal strings (called string tokens), symbol tokens (what most of us call variables), operator tokens (+, -, *, etc.), and parentheses (used to change the order of evaluation or to signify a function). ARExx will resolve all these symbols in strict left to right order, and evaluate the expression before using it. This makes ARExx code very economical, but readable, adding to its high-level appeal. There is so much more to like about ARExx that I could (and did) write a book about it! I hope I whetted your appetite to learn more about ARExx. Try ARExx and really unlock the power of your Amiga!

•AC•

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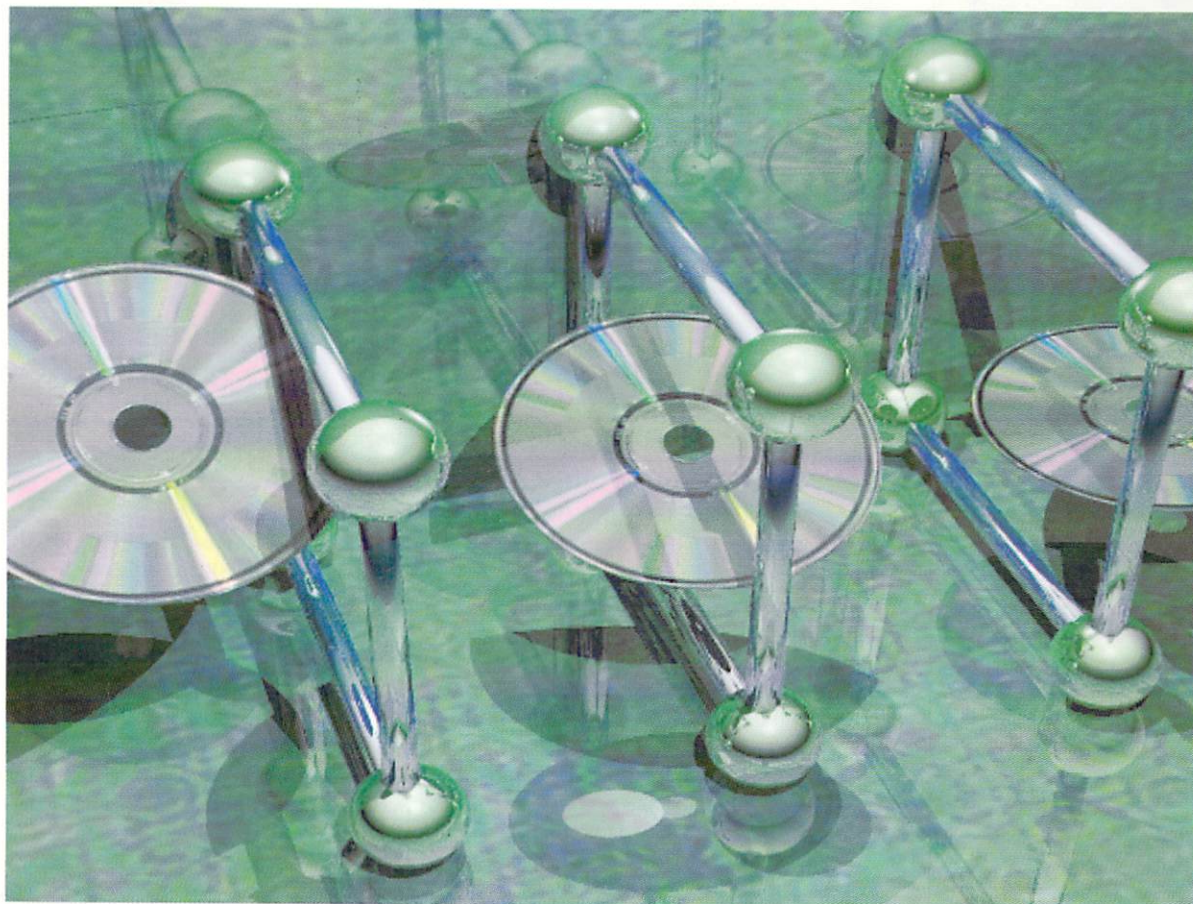
A few months back we explored the possibilities of hooking up an external CDTV unit to an Amiga using the software *PARNET*. The end result gives you a CD-ROM drive that can be accessed from all your programs as well as right from the Workbench, usually showing up as CD0:. It can be a tremendous aid to the video user, having access to hundreds of megabytes of graphics, sounds, and programs. The next logical move is to hunt down software, which can be daunting at best. Although there are many CDTV programs, there is not as yet very much in the way of specific data discs on CD-ROM designed for the Amiga. Some disc-based sets have been converted, such as the *Texture City* CD of 24-bit backgrounds, but little else. I did mention in the previous article that CDTV is fully capable of reading data from discs that conform to the industry standard ISO-9660 format, which other platforms like IBM/PC support—but how do you know if a CD you buy conforms to that particular format? Well you don't. Even though most CDs conform, a very small percentage of companies take the time to place the ISO-9660 logo on the outer packaging. Even worse, some do conform to the standard

by
**Frank
McMahon**

THE VIDEO SLOT!

but may have non-standard material on the disc that conflicts with the CDTV's automatic booting mechanism. Even if you are booting from a floppy on CDTV, the unit still checks for a boot block on the CD before it goes to the floppy. If it finds information it doesn't understand, it can crash immediately. In this edition of "The Video Slot" we'll examine some CDs that

will definitely work with your CDTV / PARNET hookup. Over the past few months, I've tested numerous discs from other platforms and have found that about 90% of IBM/PC discs will work with little or no problems. I've tried to concentrate on what video users would need most from a CD: graphics and sounds. There are thousands of files to be accessed but some



24-bit image
rendered by
author using
Impulse's
Imagine.

very specific ground rules should be gone over as well.

Ground Rules

First of all, as far as graphics are concerned, you won't find any IFF collections on these discs, although you will find *many* classic Amiga pictures converted to IBM/PC formats; most of the graphics will take the form of either GIF or BMP. GIF is a graphics interchange format that was developed and used mainly on CompuServe. It is a non-platform specific image file which can be viewed on any computer with the proper display program.

Department Pro on the other hand requires the user to render to a specific resolution after each image is loaded, a requirement that is time-consuming. The advantage to the Art Department is that it accepts a lot more of the file formats you'll come across in your CD adventures; Image Master comes up short in that respect. My solution is to use Art Department and render to a display board—such as DCTV or the Firecracker—rather than convert the file to a standard Amiga resolution. The reason is that GIF files generally contain 256 colors, meaning that most Amiga resolutions will not truly represent the image accurately.

graphic file formats but are still on some of the CDs. The bottom line is that if you are going to make extensive use of graphics from CDs, a program such as the Art Department Pro will make life a lot easier. Some CDs will contain Amiga programs, and they will generally be compressed using a program such as ARC. Yes I know it's old compared to newer versions such as LZH, but ARC is more compatible across formats and seems to be a standard for Amiga files on CD. The ARC program is usually on the same CD and the programs can easily be decompressed using the Workbench shell. It's also worth noting that



Ray-traced
256-color
GIF image
from "So
Much
Screenware"
collection.

There are many GIF viewers in the public domain for the Amiga and some CDs contain viewers for all platforms such as IBM and Mac as well as the Amiga. Several commercial programs will accept the files including *Image Master* from Black Belt and *Art Department Pro* from ASDG. Image Master has the added benefit of being able to automatically scale the image to the standard Amiga resolution you pre-select. This helps out tremendously because GIF files can be all different resolutions from 320x200 to 640x480 and higher. Art

The exception is the Amiga 4000 with the AA chip set. In fact, the A4000 is the best unit to view these CD images on since it offers more bit-plane depth and usually matches IBM/PC resolutions modes exactly, such as 640x480, with no rescaling needed.

Another format you'll see a lot is BMP. This is a Windows Bitmap file that can have any amount of colors all the way to 24-bit. Generally most will be in 256 colors; however, some CDs have 24-bit versions included as well. PCX and PIC are less-used

I didn't include any CD on which the graphics were compressed. All CDs listed have imagery that will load directly to a compatible Amiga program. Some CDs do have separate directories where the same images are provided in archived form for BBS usage, however.

As for sound there are two formats that dominate most CDs: VOC and WAV. Both are more or less equivalents of the IFF-audio format used on the Amiga with files ranging from digitized sounds to full-blown musical pieces. VOC is the standard



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used by the PC card *Soundblaster*. It has been around many years and can easily be converted to Amiga-IFF sound with the public domain program *VOC2IFF*, which can be found on local BBSs or the CD *Magnum Sight and Sound*. WAV is the standard for IBM/Windows and as such has only been recently. However, it is destined to be the main standard in the upcoming computing years. I have yet to find an easy way to convert WAV files to IFF; nevertheless, I will make known the fact that WAV files are on certain CDs because if there is not a conversion program now, or one that I'm unaware of, I believe there will definitely be one in the near future. There is one other predominate audio file format on the CDs and that is MIDI files. MIDI files are music passages that can be used in numerous Amiga programs such as *SuperJam* and *Bars and Pipes Professional*. MIDI files are the most flexible because you can play them using internal sounds or you can play them on a

and MAC images. Categories include animals, landscapes, oceans, computer art, and automobiles.

2. *Danger Hot Stuff* - Screen Artists Ltd., P.O. Box 2470, Poughkeepsie, N.Y., 12603, CompuServe: 76470,233. This is a series of CDs produced by the Screen Artists Ltd. that showcases specific artists and companies. There are many VOC sound files, and unlike most of these CDs that contain a lot of BBS VOC files, this is classy stuff composed by artists. Sounds effects such as waves, bells, screams, rain, and much more, are included. Also there are numerous music files all richly composed. As for images there are four GIF categories: digitize, drawn, fractal, and modeled. Also included is a collection of TGA—a format that can be read by Ad Pro—graphic files that are in 24-bit. Not a lot of images but what's here is very impressive.

3. *ClipArt Goliath* - Chestnut CD-ROM, P.O. Box 360, Cambridge, MA, 02141-0004, 1-617-864-8326. This disc contains over 11,000

images in their product line. This CD features 100 images of money in PCX and BMP formats, 256-color and 24-bit. It has stacks of money, people holding money, various coins, and international currency. If you are doing a video that has anything to do with finances, look no further. Also on the disk are 100 VOC sound files such as money dropping and bills being flipped. In addition, there are numerous ambient music VOC files.

6. *VGA Spectrum* - S & S Enterprises, P.O. Box 552, Lemont, IL, 60439, 800-ROM-DISC. This is one of the top selling PC CDs and it's easy to see why. It contains over 1600 GIF files and a large selection of VOC sound samples. Unfortunately the GIFs are not listed according to categories but the file names are descriptive and locating specific images is fairly easy. There are also a good selection of MAC image files on the disc as well.

The A4000 is the best unit to view these CD images on since it offers more bit-plane depth and usually matches IBM/PC resolutions modes exactly, such as 640x480, with no rescaling needed.

\$5000 keyboard with the proper software and MIDI cabling.

That's basically the rules. As long as you have a CDTV setup and can accommodate the above requirements, it's time to get excited:

1. *Magnum Sight & Sound* - Mid-America Digital, 1501 S.E. 66th St., Oklahoma City, OK, 73149. Speaking of music, if you are interested in scoring your video production, then this CD is hard to beat. In addition to numerous Amiga MIDI programs, there are also hundreds of MIDI files, as well as separate versions for Yamaha, Roland, and Casio. Also included are hundreds of VOC files and conversion utilities to convert them to Amiga-IFF format. Tons of Trackblaster/Amiga.MOD files are also on the disk with Amiga programs to play them with. The image part of the disk is just as impressive. Most of the thousands of images are in GIF format, although there are categories featuring PIC

clip art images mostly in the PCX and TIFF formats. They are in black and white for the most part and the CD contains numerous categories including dogs, animals, food, machines, music, logos, insects, people, sports, space, travel, maps, and much more.

4. *So Much Screenware* - Power User Software, P.O. Box 89, Erie, PA 16512. This CD contains over 500MB of GIF images in 640 x 480 resolutions and higher. It leans heavily on scenic places and famous locations. There are also GIF sections of animals, flight, and a nice collection of ray-traced images. The disc was developed by Save on Software (P.O. Box 2837, Wilkes Barre, PA, 18703-2837) and they have other CDs in the *So Much* series as well.

5. *Money, Money, Money* - Aris Entertainment, 4444 Via Marina, Suite 811, Marina del Rey, CA, 90292, 310-821-0234. I'm a big fan of this particular CD publisher, maker of the disc *Wild Places* that I reviewed a few months ago, because you can always count on high-quality images and CDTV compat-

7. *Our Solar System* - Chestnut CD-ROM. This one contains a vast array of GIF images ranging from pics of the moon, planets, space, and a host of scanned NASA photos. Some are 320 x 200 but most are 640 x 480 and higher resolutions.

8. *Mother Earth II* - Hammerhead CD-ROM - Starware Publishing Corporation, P.O. Box 4188, Deerfield Beach, FL 33442, 305-426-4552. This is an excellent CD with a catch. Image categories include New England countryside, ocean horizons, sunrise/sunsets, crashing waves, and beaches. Resolutions are up to 1024 x 768 and all images are professionally photographed and scanned with high detail. Hammerhead also produces a PG-rated disc of stock photos called *Lovely Ladies II*—also CDTV compatible—that was produced by the same photographer: Bruce Curtis. The catch? Hammerhead is very strict about the use of its images. If you need to use them for any other reason besides viewing, you need to get permission and possibly pay a "low" fee.

This company produces only top-of-the-line BMP files so the cost may be worth it if you plan to use them in a commercial video situation.

9. *ROMWARE Magazine* Vol. 2 / No. 1 - Nimbus Information Systems, P.O. Box 7427, Charlottesville, Virginia, 22906, 804-985-4625. Nimbus is one of the larger CD publishers and this particular disc is filled with about 1000 film stills in 8-bit 256 grey-scale. Image quality is excellent, but unfortunately the files do not have identifiable names and are listed by numbers. All images are in PCX format.

10. *Lion Share* - Uni-ROM, San Diego, CA, 619-279-1139 (BBS - 619-279-4774). Lion Share contains a few hundred GIF files in no particular category; it's a pretty mixed bag. Most of the disc is taken up by IBM shareware, but there are some good quality images on it as well.

11. *Phoenix-CD Version 3.0*. Phoenix is another very popular series of CDs that feature music and graphics. As for music there are numerous VOC and MIDI files; however, unlike most CDs, they are compressed with the ZIP archive method. Phoenix has hundreds of GIF files with categories like places, men, space, vehicles, wildlife, nature, cartoons, and traditional art. All images are neatly listed in text files contained in the "Gsl" drawer.

12. *World View* - Aris Entertainment. Aris has come up with a stunning collection of NASA space photos that are just perfect for 3-D animation and backgrounds. One-hundred hi-res images are included in 256-color BMP. There are also 24-bit versions in PCX and TIFF format. Rounding out the collection is 100 audio clips in VOC and WAV which range from space sounds to new age music. Once again you really get your money's worth with any Aris disc and this collection is no exception. Aris also makes the following discs: *Wild Places*, *Jets & Props*, *Business Backgrounds*, *Batik Designs*, and *Vintage Aloha*. I have not tested every Aris disc with CDTV, but the ones I have are all 100% compatible; it's a safe bet the others are as well.

13. *Too Many Type Fonts* - Chestnut CD-ROM. This PC disc contains thousands of fonts in numerous formats including *True Type*, *First Publisher*, *Ventura*, *HP Laser Jet*, *Adobe Type Manager*, *Windows*, and more. The disc is 100% CDTV compatible so that getting a good Amiga font program and converting some of this large collection would be well worth it.

14. *Night Owl's* - PDSI. This disc is mostly PC shareware and there are numerous MIDI and VOC files but they are all

zipped. Also, even though there are two directories of GIFs, there is not really that much compared to other discs. Might be worth a look.

15. *GIFs Galore* - Walnut Creek CDROM, 1547 Palos Verdes, Suite 260, Walnut Creek, CA, 94596-2228. I mentioned this one last month and I'll include it here again. 5000 GIF images in over 40 categories for \$25.

The above are all CDTV compatible and contain vast amounts of resources. Most CDs which contain images usually have between 250-4000 images on average. GIFs are naturally compressed and CDs can hold quite a few of them. Some of the discs are merely from large BBSs, meaning that the images are public domain but may have text on them. Most publishers don't have strict reproduction rights with the exception of Hammerhead. All the CDs mentioned fall into the same price range, averaging from \$25 to \$65. Chestnut CD-ROMs are the least expensive, usually around \$19 street price. Where can you get these CDs? One of the largest distributors is Mr. CD ROM, P.O. Box 1087, Winter Garden, FL, 34777, 1-800-444-MRCD. They claim to have the "world's largest selection," which may be true. I do know that they have a free catalog, competitive prices, and offer great discounts for ordering three or more titles. The source I use is PC trade shows. There are usually tables full of CDs, and most dealers are willing to give discounts. If you have any IBM friends, ask if they know of a local show. Better yet, contact software stores; they usually have a handle on these things. For information on hooking up your CDTV to your Amiga, check with your local dealer and get a copy of the program PARNET.

Of all the tools used in video production, I have to say a CDTV hooked up to my Amiga has been the most indispensable. While the initial investment may seem steep, the wealth of images and sounds available is staggering. With the Amiga, the sights and sounds have always come naturally, but with the addition of a CD-ROM drive there lies a whole new world waiting to be explored.

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bug bytes

by John Steiner

The latest in tips, workarounds and upgrades

product: Express Copy
re: copy bug
source: reader mail

Willi Kusche of Bellmawr, NJ writes regarding volume 1.5 of the *Fred Fish Collection on CD ROM*. The collection includes a utility that allows a user to create copies of the original Fred Fish diskettes. That utility is named "Express Copy". The program appears to have a bug that becomes apparent if you try to create a copy of Fish disk numbers 552, 562, 566, 572, 573, 575, or 576. The CD ROM has .info files that do not exist in the original Fish disks. In the case of the above mentioned volumes, the extra files are enough to push the total space of the files over the capacity of a standard Amiga 3.5 inch diskette. When Express Copy is asked to create a copy of one of the diskettes listed above, it creates a garbage diskette instead of recognizing that it is being asked to copy more information than will fit on a standard Amiga diskette. He notes that Hypermedia Concepts, publishers of the CD-ROM, have been notified of the problem.

I have a couple of possible workarounds to this problem. One trick I have learned with Amiga's multitasking ability is to run a file utility such as Click-DOS that can display directories and files, and delete them quickly. I have unarchived many files to the RAM disk, and while the unarchiver is working, I have

selected and deleted files by using the file utility, keeping ahead of the unarchiver. If the .info files are copied first and can be deleted quickly enough, this technique might work.

The other workaround involves the fast file system under Workbench 2.0. Instead of formatting the disks under the old file system which gives about 856K available on a floppy, use the FFS option in the format command to format your floppy. That will give you approximately 890K available (both values assume no trashcan on the disk.) That extra space may be just enough to allow the inclusion of the .info files. Be aware though that this disk cannot be read on a system that doesn't support the FFS format. Once you get the disk copied, however, the .info files could be deleted, and the remaining files copied to a standard AmigaDOS floppy.

product: A3000
re: SCSI bus hang-ups
source: reader mail

Everett Greene writes this month with more information about the SCSI bus hanging problem on the A3000. He notes that the problem occurs only with certain programs. He lists as examples *Amiback*, *Manx C* compiler and linker, and the *Lattice/SASI* compiler and linker. "The problem doesn't appear to be with those programs per se but instead may be due to the order

or timing of the SCSI bus operations initiated by those programs. The *Quantum* disk drives are certainly suspects in this problem...but the symptoms are not consistent with that possibility."

"...I had an opportunity to use a SCSI bus monitor on my machine when the problem occurred with *Amiback*. It was noted that an operation was being attempted to SCSI device 4 when the bus hung; I had no device 4 on the bus at the time. Perhaps this is a clue..."

product: AEHD driver
re: minor problems
source: EMail

Frederick R. Claus sent EMail regarding his request for information on the AEHD driver. He ordered the high density disk driver from Max Woodbury that was mentioned in the September 1992 Bug Bytes. Mr. Claus writes, "I took the plunge and bought the driver from Mr. Woodbury. Overall, I like the driver, as it allows me to use the AEHD drive in HD mode as well as in the regular mode."

He does note a couple of minor problems with the driver, however. "The first problem I encountered was that upon startup, the patch must reset a pointer, a flag, a vector, or something, that the Amiga 3000 doesn't like. I started out with it in my WBSTARTUP folder, but every time it booted I got a

requester that said:

WARNING
The system Trackdisk.device
BeginIO
Vector Has been changed.
Shall I RESTORE it?

"The first time it came up I answered "YES" and then the HD mode would not work. You have to tell it "CANCEL", if you want it to work in the HD mode. I now start it from the icon provided, so it only 'requests' at that time.

"The second problem is that it does not work in HD mode when using MULTIDOS, the MS-DOS disk format reader/writer for the Amiga. In regular low density mode, the drive works OK with MULTIDOS, but in HD mode it chokes. For some reason it cannot or will not recognize an MS-DOS formatted HD disk." In all fairness to Mr. Woodbury's driver, I do not believe that the AEHD drive is capable of reading MS-DOS format drives under any condition. The original driver could not read high density MS-DOS disks under Workbench 1.3 either.

Aside from these limitations, Mr. Claus recommends the driver.

re: Amiga to VAX connection
source: EMail

Dr. John S. Garavelli of Washington DC responded via EMail regarding the December 1992 Bug Bytes request for information on the possibility of using an Amiga to connect to a VAX system. Dr. Garavelli writes, "This letter is being typed on my Amiga at home running Micro-Systems Software Works telecommunications software connecting through the serial port to a *SupraModem 2400* by phone line to server connected to a MicroVAX 4000 at work. My Amiga at work is connected directly by its serial port to the serial port of another MicroVAX using the same software and by an ethernet card to a DECNET network using TSSNet software that allows the Amiga to behave like any other node on that network, logging on to and transferring files with MicroVAXes, VAXstations, DECstations and a minisupercomputer. File transfer can be accomplished on the

serial port (although much more slowly and laboriously than on the ethernet) using the MSS telecommunication program's KERMIT support."

product: TTR tape drive
re: A3000 compatibility
source: EMail

Greg Bastow writes via EMail regarding Jay Dauro's problem with a TTR tape drive and his Amiga 3000, mentioned in the November 1992 Bug Bytes. He comments, "I would like to offer a few pieces of information. The first is rather unfortunate, that of TTR no longer being in business. ...In terms of finding a problem....Here are a couple suggestions in getting SCSI Tape drives to work..

"Make sure the device does NOT have reselection turned on in the filing system. There is a known problem with this and multiple devices on a lot of Amiga's (depending on controller). He should make sure he is using the latest Kickstart 37.175 version, and the most current version of l:fastfilesystem (doing a 'version [devicename]' will show you) >36.102 (WB2.04).

"Also make sure that DATABURST is not on in the 68030 mode - with many read-ahead-caching hard drives this can cause some serious problems."

product: Project D
re: future
source: anonymous

A reader who wishes his name to remain anonymous writes with regard to Phil Comb's request for information on *Project D*. He comments "As a friend of a friend of Ben Fuller, I understand he is currently working at SoftWood on *FinalCopy* (check the 'about' in the FC menu). I also heard that he is considering reviving *Project D*, but as of yet the company is still idle... If Phil Combs is looking for a good copier, try Maverick. They seem to add new parameters regularly."

product: PageStream
re: patches & updates
source: Internet

Kevin Davidson sent Internet mail regarding some updates to *PageStream*, Soft-Logik's desktop publishing program. Since the release of *PageStream* 2.2, there have been two patches released. One can download the patch files and update *PageStream* using the instructions provided. It is necessary to obtain and apply BOTH patches to upgrade from 2.2 to 2.21. Those who'd rather not try the patches, can order the updated programs on disk from Soft-Logik for a nominal fee. The patches can be downloaded from the Soft-Logik BBS in St. Louis at (314) 894-0057, Portal or other commercial services.

PageStream has recently been upgraded to version 2.21. Space doesn't permit me to list all of the changes and bug fixes he noted, however I have listed a couple of major additions and improvements.

The program has a new Break Link command which replaces Shift Publish. This feature requires HotLinks. The software also will use Workbench 3.0 menus and scrollbars if Workbench 3.0 is installed. In addition to the *PageStream* patches, there are new and updated import modules and printer drivers available. Updates can also be downloaded from the Soft-Logik BBS. New import modules are included for Adobe Illustrator, IFF DR2D, Design Works, and Pro Draw Clip files. New printer drivers include PostScript, Canon BJ10e, Canon BJ330, HP DeskJet: 2.1, HP DeskJet 500 (Color), HP PaintJet, HP PaintJet (Color), Toshiba P351, and a beta Toshiba P351 (Color). He noted several improvements written specifically into the *PageStream* Postscript driver.

Version 1.1 of HotLinks editions is also available which includes the BME Trace program. Call for details on upgrade pricing.

Soft-Logik Corp.
11131 South Towne Square Suite F
St. Louis, MO 63123
(314) 894-8608
Fax: (314) 894-3280

product: Hurricane Accelerator
re: Workbench 2.04 compatibility
source: reader mail

Jeff Froese of Saskatoon, Sask writes regarding the December 1992 Bug Byte, Paul Tibbals workaround installation of WorkBench 2.04 with Ronin's Hurricane Accelerator. He writes, "I have the same accelerator and have had the same problems and may have the solution for him. "My system consists of the following: A2000 rev 6.2 C= 2meg AutoConfig Ram Expansion C= A2090A controller 40 meg ST-506 Rodyme HDrive Switch-itt ROM switcher 1.3/2.04 Rom installed Hurricane 68030/68882 33/33mhz with the 4meg ram expansion

"I am currently operating the hurricane with the caches on with the ROM "half-mapped" into Ram, with WorkBench 2.04. According to Sysinfo 3.01 it benchmarks at 1.66X's an A2500 and .74 that of a A3000 25mhz. Aibb4 benchmarks most tests at about 30% over the speed of the A3000/25. These benchmarks may not be astounding for a 33mhz 030 but it is an improvement over what Paul is getting, mainly because the DataCache is enabled.

"Unfortunately I have not found a way to remap the entire 2.0 ROM (only 256k) but having the DataCache enabled will give you more speed than remapping the ROM. Until the developers of HurricaneConfig write an upgrade for WB 2 this is all we can expect.

"There are two ways to enable the DataCache depending on the system you have. This first method makes no remapping of the ROM and doesn't like AutoConfig ZorroII devices. But it seems to be more bug free when running some applications like TurboSilver. It goes like so:

```
Setpatch nocache >NIL:
;nocache option to avoid system crash
on bootup
binddrivers
mount fh0: from BOOT:devs/
MountList.HD
assign >NIL: FH0: exists
IF NOT WARN
HurricaneConfig -a -r > nil: ;a- -r
do not enable data cache or 32bit Ram
enforcer > nil: ;takes
over the MMU
```

```
addmem32 >nil: ;Add
32bit mem
setcpu cache > NIL: ;en-
ables both caches
```

"If I have my 2 meg ram expansion installed I get a crash when enforcer is run. I cannot remap the ROM with this configuration though.

"The second method allows me to use the 2 meg ram expansion and copies 256K of ROM. This is the setup I'm using now and have only had a problem when trying to run TurboSilver.

```
Setpatch nocache >NIL:
;nocache option to avoid system crash
on bootup
binddrivers
mount fh0: from BOOT:devs/
MountList.HD
assign >NIL: FH0: exists
IF NOT WARN
HurricaneConfig -a >NIL: ;En-
ables caches but does not add 32bit
ram
Addmem32 >NIL: ;adds
32bit ram
```

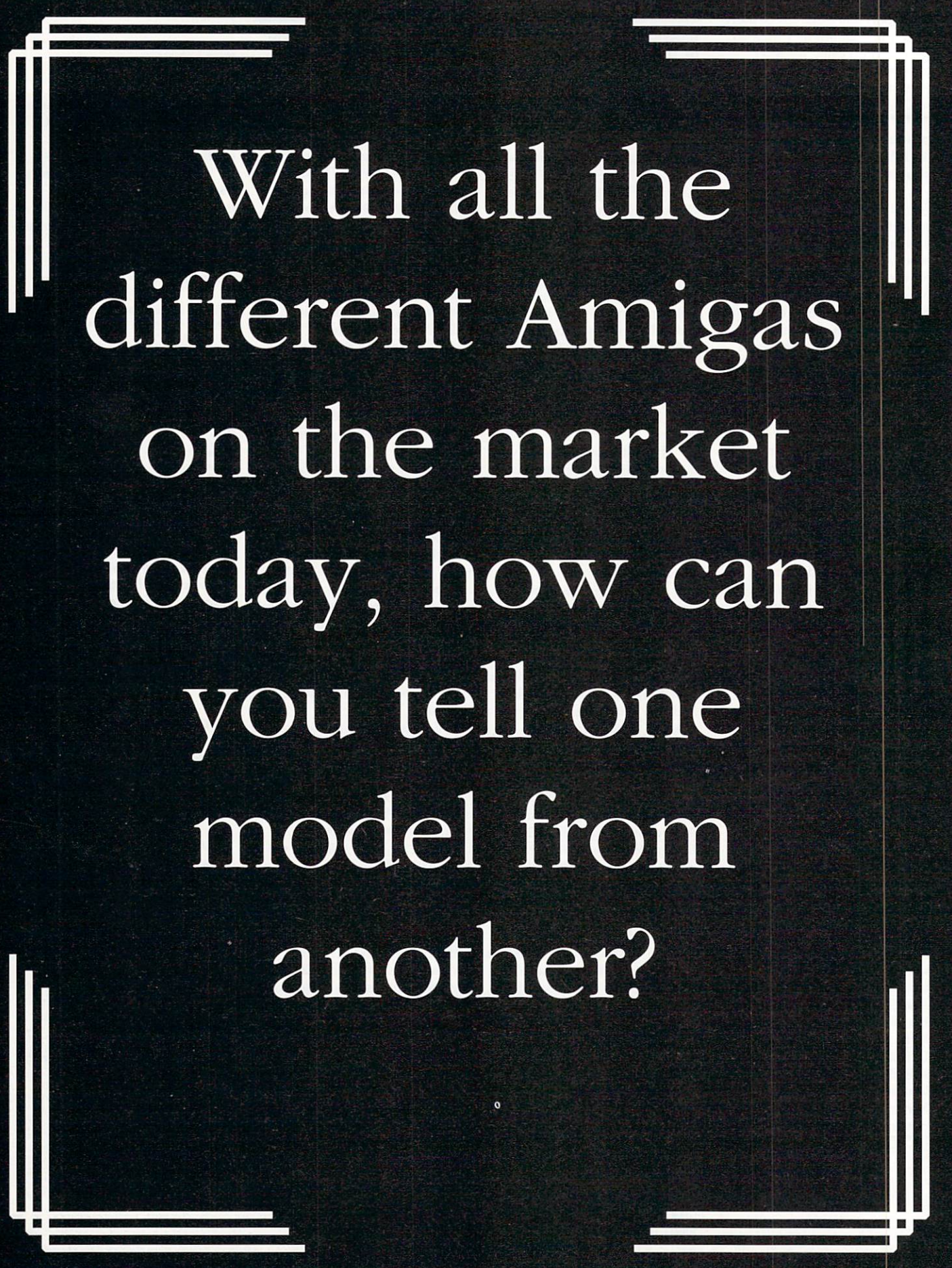
"I assume that Paul has a 2090A HDcard since he uses Addmem32. This is not needed with a no-DMA controller like the 2091. I hope that this is of some help for Paul and any other Hurricane users. I am not completely satisfied yet and am still searching for a way to remap the full 2.0 ROM."

That's all for this month. If you have any workarounds or bugs to report, or if you know of any upgrades to commercial software, you may notify me by writing to:

John Steiner
c/o Amazing Computing
Box 2140
Fall River, MA 02722

...or leave EMail to John Steiner on Portal 73075,1735 on CompuServe Internet mail can be sent to John_Steiner@cup.portal.com FAX John Steiner at (701)280-0764

•AC•

The image features a dark, textured background with a white serif font. The text is centered and framed by decorative white lines in the corners, which consist of multiple parallel lines forming an L-shape. The text reads:

With all the
different Amigas
on the market
today, how can
you tell one
model from
another?

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Business Cards:

Many people are already using the Amiga to do business. Some use it for its unique graphics and video capabilities while others use it to run their business. In most cases it is because they believe in the Amiga and its unique abilities to meet their diverse needs. Yet these same people think nothing of paying someone to use a different kind of computer to create business cards, stationery, and forms. Why? Maybe because they don't realize that the Amiga excels at desktop publishing. Maybe because they are not sure how to create common business stationery. In this article you'll see how easy it is to use the Amiga for desktop publishing.

What can it do?

The Amiga can be used to create all the common stationery associated with running a business. Some examples are business cards, letterheads, invoices, fax forms, ads, proposals, log sheets, contact letters, and coupons. The list could go on depending on the nature of the business.

What do you need?

You need an Amiga, of course, and a printer of some sort. For software you'll need one of the desktop publishing programs. The examples in this article are done in *PageStream*, but other products could be used. As a rule of thumb, if you already have the tools to use an Amiga in your business you have what you need to do desktop publishing.

Your business image

Why create your own business cards, letterheads, and other stationery? The reason is to take control of your printed business image. Many people don't think about their printed business image beyond choosing a name and perhaps a logo. These same people are very concerned with the quality of the work and service they provide. Yet the business card they hand out says nothing positive. It is important to remember that an invoice, business card, or fax may be all a customer has to remember you by. Everything you send out should promote a positive image to your customer. Of all the pieces of paper that are part of your business, perhaps the following are the most important:

Business Card
Letterhead
Invoice
Fax

Why are these things so important? They're important because they don't stay in-house; they always go out. These are also good things to look at since they are the easiest to do yourself. Before designing, or redesigning your business card, let's look at some important design issues.

Color

Color is a powerful communicator. What is your company's color? Do you have a company color? If you don't, you should seriously consider establishing one. A company color is a very powerful way to identify yourself. Everyone recognizes the standard brown color of UPS or the maroon and gold of McDonald's. The dark blue and white combination of a Federal Express package distinguishes it from the stack of letters on your desk and signals its urgency. You can use colors in this way too. Color stationery always catches the eye, as do colored mailing labels and

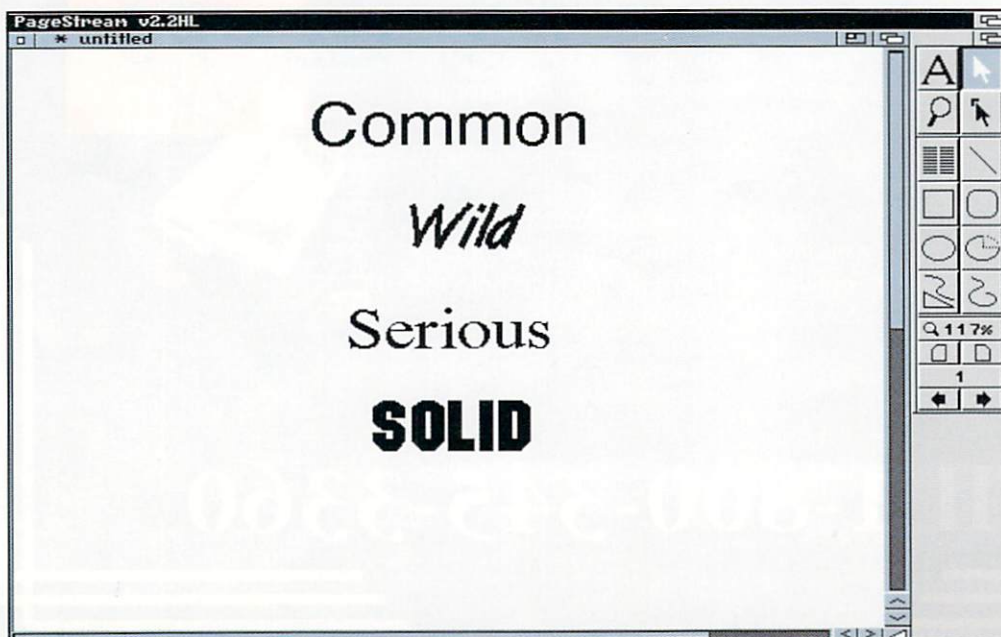


Figure 1.

Using Desktop publishing to promote your business

by Dan Weiss

business cards. The question, then, is what colors? Some colors can say something about your business. White and red often signify medical companies. Dark colors communicate stability. Dull colors, such as brown or dark blue, communicate physical labor while bright or trendy colors indicate creative enterprises. Hence, it's not so good of an idea for a trendy new design firm to choose UPS brown or for a construction company to use neon pink. Sometimes it is good to choose two colors that complement each other, like McDonald's maroon and gold, to create a more specific identity.

If this is the first time you have considered company colors or if you are reconsidering company colors, you may want to think about some publishing-related issues. If you will be using a color printer to do much of your color printing, you may want to choose colors that are fully saturated, that is to say, bright and bold colors. Computer printers are not very good at reproducing a light blue for instance. The output ends up looking like a lot of dark blue dots on white paper. Very light colors, such as peach, are bad choices also because while the yellow part is strong, the magenta part ends up looking like orange freckles. On the other hand, if you use your Amiga to make a master that you then have professionally printed, the printer can mix you any color you choose.

Color can also be important when choosing paper. As with printed colors, paper color can communicate an image of your company. The type of paper is important too. Standard "photo-copy" paper does not look impressive. Instead you should consider a heavier grade of paper with more rag (cotton) content.

Along with the weight of the paper, you can also compare the textures. Laid paper is a popular choice for business letterheads. To see a selection of what is available, stop by your local quick printer or photocopy shop. The staff can show you samples of the many types and colors of paper available. In most cases they will also be able to supply matching envelopes. I would suggest staying away from overly bright or "neon" type papers.

The next thing to consider is logos and type. Do you have a company logo? Does it "say" something special about your company, or just that you are another person in the same business? For instance, the McDonald's golden arches, the red and white Coke wave, and Volkswagen VW all scream out instantly who they are. But a wrench, computer disk, and video camera are all very generic. Try to use a logo that says something about your name or perhaps shows your business in a different way. As an example, we will create a business card that has film sprocket holes on the side. This quickly communicates the nature of the business in a unique way.

Text can also be used as a logo. IBM has established one of the most powerful text logos of all time. It is simply the letters "IBM" with white lines through them. The most common form of a text logo is simply the company name in a specific font. The Sony and WordPerfect logos are good examples of this.

Finally, what text you use can say much about your company. Much like choosing a company color, it can also be good to choose a company font. Also, like colors, there are many "shades" or types of fonts. Some are serious, some fun, some soft, and some hard edged (Figure 1). Make sure the font you use says what you want to say about your company. This font can be used to give a strong identity to your stationery. It should not be used for day-to-day work, but instead be reserved for special pieces.

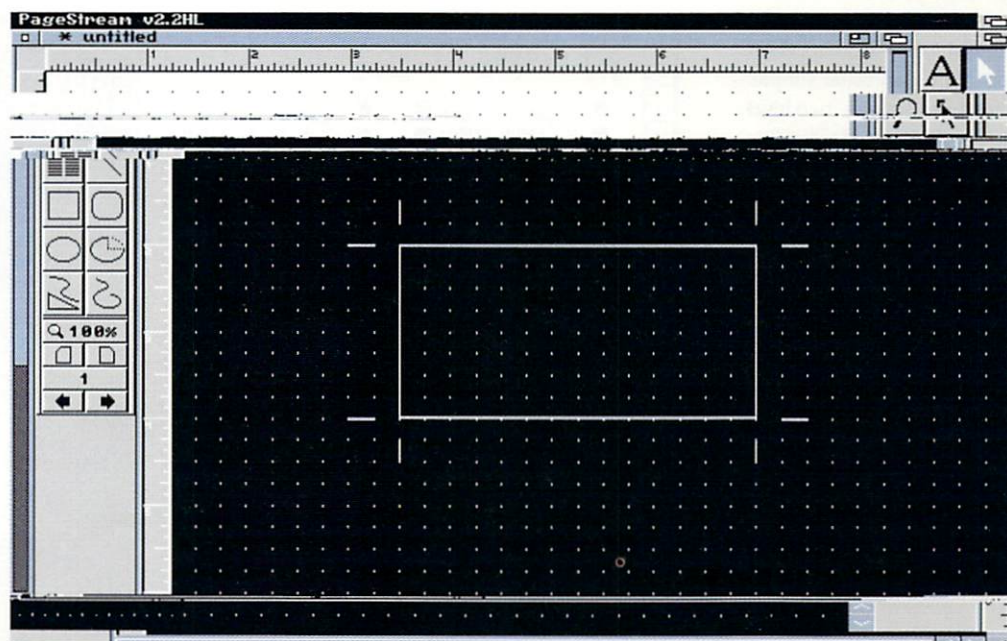


Figure 2.

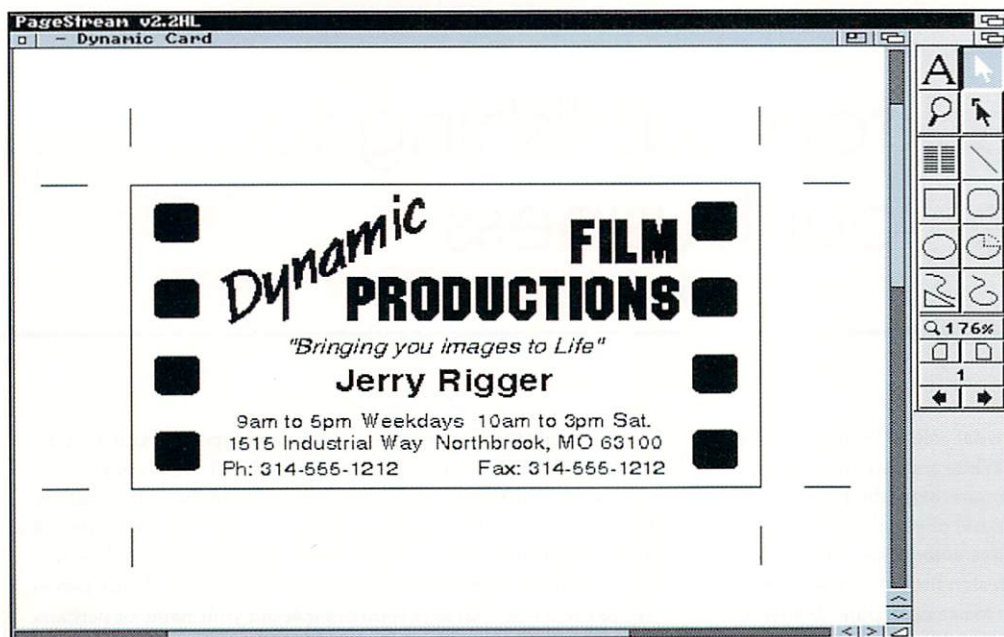


Figure 3.

organization or union.

Now to the meat of the project: open your desktop publishing program and create a standard letter size page (8.5" x 11"). While many programs offer a business card page size, for our project we want the larger space a full page offers. To help in the design, set your grid to .25" in both directions and turn on Snap To Grid. Create a box 2" x 3.5" at the approximate center of the page. This gives us framework to work within.

At each corner of the box, draw a .25"-line .25" from the card following the side of the

Project: Business Card

To start a business card, you will want to grab your existing business card—if you have one—and gather the following information:

- Name and possibly title of person whose card this is
- Company Name
- Address
- Phone Number
- Fax Number
- Cellular Phone Number
- Hours
- Logo
- Business Statement

Remember, the business card introduces you and reminds the customer of who you are. Phone numbers are the most important information after your name and the company's name. Addresses are also important. If you expect a lot of walk-in traffic, for instance, a retail location, you should consider simple directions such as "two blocks south of Main and Grand" to help people find you. Business hours are also a good idea so that people will be most likely to get you on their first try. Finally, a business statement is a slogan or statement that separates your company from the rest. It could be a short slogan like "Where America Shops" or a statement like "Certified by Plumbers of America." The statement may also be used to indicate membership in a given

card (Figure 2). These marks are known as cut or crop marks. They are used to show where the card should be trimmed after it is printed. If you have a logo, place it first so that it can be prominent in the design of the card. In the case of our example card we placed film sprocket holes on the sides to give the feeling the user was holding a piece of film. To create the sprockets we used the rounded rectangle tool to make the holes, and then filled them with black. The sprockets needed to be created first since they set the bounds for everything else on the card.

Now we need to place the textual information we collected. The most important items are the name of the company and the name of the person whose card this is. In the example card we use a script font, SurfStyle, and a very mechanical font, Machine, to display the company name. This shows both a serious and creative side. Normally that would be mixed signals, but the area of video production often has to show both sides. Together the two fonts create a text logo for the company.

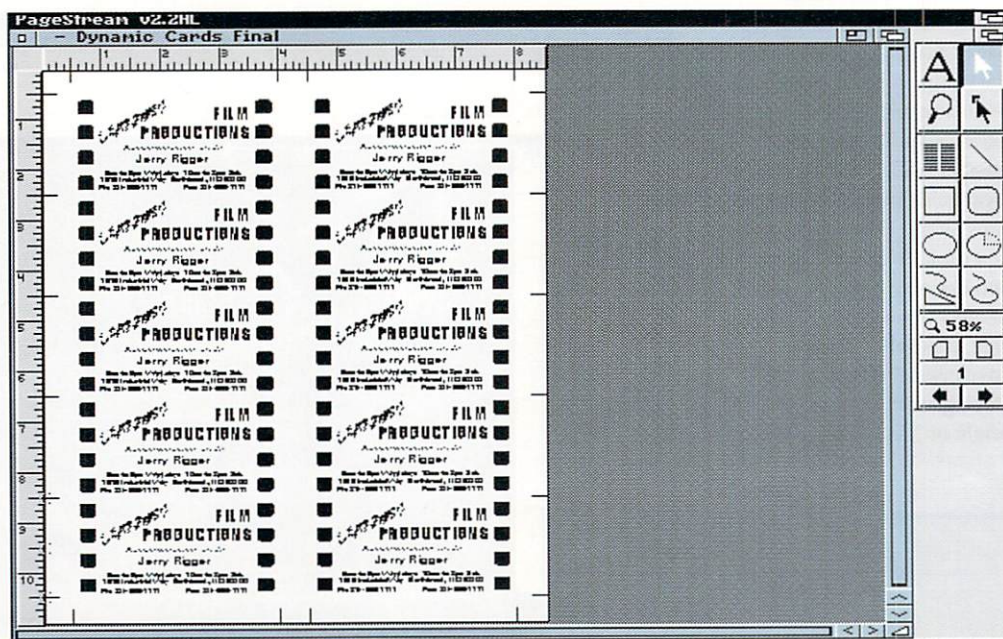


Figure 4.

The name of the person this card is intended for is in a plain sans-serif font, Triumvirate. This way, the name is easy to read even at small sizes, and is not likely to be misunderstood. The name is centered horizontally and vertically on the card to draw attention to it. As much as possible, we are using the grid to maintain a clean and well-aligned layout, but for the best horizontal centering, you may want to use your program's Align feature.

The company slogan can be fit between the logo and the title in this design. Again, first place it with the grid, then center it with the Align tool. Also, italics and quotes are used to call out the slogan; it gives the impression of someone reading the slogan aloud.

The last three lines of the card show the hours, address, phone and fax numbers. All are done in the same font as the name for readability. To make the design look fuller, the phone numbers are spread out to the sides of the card as opposed to being centered.

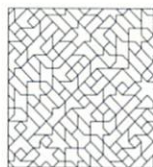
Now we have one card finished, not very hard really (Fig 3). Next we need to make a whole page of them. A standard business card will fit two across and five down, while leaving half an inch on all four sides. To make the best use of the page, copy the business card and the top and left cut marks to a new page. Place the card in the upper left-hand corner of the page. Copy the card from the original page with the top and right cut marks to the upper right corner of the new page. Select the two cards on the new page along with the left and right cut marks. Duplicate the selected parts three times each, two inches farther down the page. Finally, copy the top cut marks from the top of the page to the very bottom of the page. Your page should now look like Figure 4.

The final step is to remove the boxes that surround each card, eight in all, and delete them. The boxes were only there as guides. Now you have a page of business cards that are ready to be printed. The cut marks on all sides show you where to cut without leaving a border as the boxes would have. For mass production of these cards, as I hope you want more than eight, you have two choices. The first choice is to print them yourself with your printer, which is a great way to create cards as you need them. If you need more cards in a hurry, your other choice is to take a clean print from your printer and get the image photocopied onto card stock or heavy paper at a quick copy shop. A quick copy shop would probably be able to cut them for you as well.

Using the equipment you already have, and some off-the-shelf software, you have been able to create a new personalized business card. Other business stationery is as easy to create. As mentioned in the beginning of the article, fax forms, letterheads, and invoices are all examples of what you can do on the Amiga. As time and space allow, I hope that we can look into these and other business publishing projects. Remember, the Amiga is a powerful tool for any job.

•AC•

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ROOMERS

by The Bandito

[These statements and projections presented in "Roomers" are rumors in the purest sense. The bits of information are gathered by a third-party source from whispers inside the industry. At press time, these rumors remain unconfirmed and are printed for entertainment value only. Accordingly, the staff and associates of Amazing Computing cannot be held responsible for the reports made in this column.]

The A1200 Arrives

Commodore has delivered the first low-cost AGA Amiga, the A1200. Its aggressive pricing—under \$600 on the street—means that it competes very well against even the cheapest of MS-DOS clones on price, while it runs rings around them in performance. And it blows the Mac LC into the bleachers. If Commodore can market this baby even half as well as the engineers designed it, there'll be a million of them sold before the end of 1993. The Bandito doesn't know whether to grab one of these hot little items, or sell the car and get an A4000, or wait a little longer for an '030 AGA Amiga.

A few grumblers are complaining that Commodore didn't put in a high-density disk drive, or a 68030 instead of the 68020, or make a hard drive standard. Well, those would have been nice additions, but the Bandito understands that Commodore wanted to keep the price low. And that's really important in these days of cutthroat PC pricing. Buyers want a lot of bang for their buck. Sure, by the time you've added in a hard drive and monitor your A1200 is about \$1200. But the advertised price was only \$599... much easier to justify to your pocketbook. The Bandito hopes that Commodore will continue to drive the price

down; it'd be great to see the A1200 under \$500 by the summertime.

Now all we need is software support. Fortunately, there's a lot of software on the way. Electronic Arts has already announced DPaint IV for AGA, and a new version of Deluxe Music. Art Department Pro is already AGA compatible—they sent out an "upgrade notice" to their owners, to say that they already had the upgrade built into the current version of ADPro. Digital Creations is shipping Brilliance, their new AGA paint program. You can expect all of the major software packages to support AGA in short order. The 3-D software packages should be among the first to announce support. You'd better start saving your money for software upgrades if you are planning on selling your old Amiga and buying an A1200 or an A4000.

Now we have to see how Commodore intends to market the A1200. Is it a low-cost graphics workstation? Or a home entertainment/creativity computer? Will Commodore sell the A1200 only through their dealer network, or will it be found in mass market chains like Toys R Us? What kind of advertising budget will it get? How about television advertising? With the graphics capabilities of the AGA chips, the machine should be able to create its own commercial. If only Commodore would hire some killer multimedia artists to go out and make some awesome demos... look, you're trying to sell multimedia, right? So why not use multimedia selling tools?

The Bandito figures that the A1200 could fill in quite nicely for the Amiga 500. But Commodore has to work hard to get the A1200 in the outlets where you could once find the A500. It's going to be an uphill battle for Commodore since they've lost so much

ground in the U.S. market. Fortunately, the new management team seems to understand the problem. The A1200 is certainly the right hardware to solve the problem; all they need now is the right marketing. Commodore has to convince people that the A1200 is a better and cheaper computer for their home than a Macintosh or a PC clone.

Amigas: The Next Generation

While everyone is admiring the features of the AGA chip set (including more different video modes than the number of colors in an Atari ST's palette), Commodore is hard at work making the AGA chips obsolete. The new graphics chip set in development will make AGA seem puny, according to the whispers reaching the Bandito. The Bandito hears that this new Commodore chip set has a boatload of new display modes, including ones with more than 1024 x 1024 pixels, 16 million colors available at once, and an amazing bandwidth (along with new blitters) that makes it possible to animate these screens in real time. When can we expect this new capability? Perhaps appearing in a product in 1994 sometime. Maybe along with a Motorola 68060 CPU for amazingly fast performance. Oh, and full 16-bit audio, with 32 voices, and up to 100kHz sampling rates. We'd better hope that mass storage gets massively more affordable. This kind of capability could mean every Amiga would have Toaster-like ability to manipulate live video.

While you're imagining zooming into the future with a high-speed chip set, Commodore is planning on other Amigas as well. The Bandito hears that a notebook Amiga is merely awaiting good-quality, reasonably-priced color LCD screens and a full CMOS chip set. We could see both of

those things late in 1993, or possibly by early 1994. Of course, just because Commodore can design a notebook Amiga doesn't mean they'll market one. While there are a lot of current Amiga owners who would buy a notebook Amiga, Commodore has to figure out how such a computer would appeal to people who don't already own an Amiga. Here's the Bandito's suggestion: pitch this as the ultimate traveling multimedia machine, and design the features to match. Give it an RGB video out and an NTSC video out, along with, of course, stereo sound output and perhaps a MIDI port. With AGA graphics, you've got a terrific presentation machine to take on the road.

Commodore can make an even bigger mark on the multimedia market by adopting some emerging multimedia standards for the Amiga. Cross-platform compatibility is very important to many work sites these days. The Bandito figures that Commodore could sell a lot more Amigas if the Amiga understood Apple's QuickTime file format for audio/video playback. (QuickTime essentially lets you play little movies on your computer screen; you know, sort of like the NewTek demos were doing four years ago.) Apple's even made QuickTime available for Windows machines now. Think how blazingly fast QuickTime would be on an AGA Amiga with its animation support. It would blow those expensive Macs right out of the multimedia waters. And if Commodore can build in CrossDOS—a terrific move that the Bandito's been pushing for years, maybe they can add in Mac file support to good old AmigaDOS while they're at it.

The Amiga already has the multimedia software to match any other machine, and the best multimedia hardware. If the Amiga

could handle the important file formats for Macs and IBMs with transparent ease, the Amiga can sell easily to corporate America. Or at least, the Amiga can fight for sales with better weapons.

The Bandito thinks that Amiga software publishers need to help out in this battle. No, not by giving Commodore money. Sure, sure, continuing to release more powerful and more innovative software is obvious, but that's already happening. What the Bandito is referring to is file compatibility.

You see, people are surrounded by computers these days. Many people use a computer at work. Many people have friends or relatives that use computers. Or if you belong to an organization—like a volunteer group, or a fan club, or a church—that puts out newsletters or flyers, there are people in

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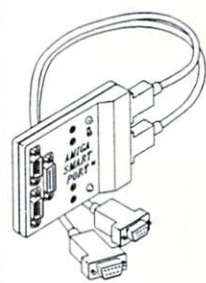
Circle 120 on Reader Service card.

dore makes the commitment to hi-density drives in all future Amigas (the one thing sadly missing from the A1200), it would be possible to add Macintosh disk compatibility to the Amiga operating system.

If you could easily load and save any PC or Mac file to your Amiga programs, this would make the Amiga much more attractive as a second or home computer. Then you'd have all the advantages of the Amiga's terrific operating system, the amazing graphics, animation, and sound capabilities, along with the security of knowing you could work with your computers at the office or the ones that your friends have.

Yes, the Bandito knows that it's possible now to transfer files between the Amiga and other computers. But it's not easy. The process needs to be as transparent as possible to the user. Someone should be able to work on a document on their PC clone at the office, save the files to a floppy, come home and put the floppy in their Amiga and work on the files, then bring back that floppy to the office the next day. And without going through any tortuous file conversion procedures, either.

At the office, the Amiga should connect transparently to existing networks. Yes, you can hook an Amiga in right now by jumping through some hoops. But the Bandito thinks that Commodore should make sure there are seamless software connections between Amigas, PCs, and Macs on the various types of networks. Businesses are hooking up their computers in great numbers these days. The Amiga can't afford to be isolated, shut off from the mainstream of corporate computing. Commodore needs to get Amiga e-mail



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that group that have computers (or need to use one). And the fact is that most of the computers out there are PC clones or Macintoshes. This is a powerful incentive to pass up the Amiga and buy a PC clone or a Macintosh.

Amiga productivity programs should all be able to load and save popular file formats for DOS, Windows, and Macintosh programs. For instance, all Amiga word processors should be able to read and write Microsoft Word and WordPerfect files at a minimum. ProPage and PageStream should be able to handle PageMaker and QuarkXPress files. And so on. Perhaps Commodore could help by providing some file translation utilities. Certainly, the addition of CrossDOS to the Amiga operating system is an important step, so that Amigas can read and write DOS format disks. Now, if Commo-

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compatibility with major software packages, as well as file compatibility.

Commodore should take the lead in providing system level software to make this easy, and in persuading developers to add cross-platform support to their products. The IFF standards have been tremendously helpful in integrating the Amiga software environment and making it more useful. Now Commodore needs to bring that same level of functionality to cross-platform environments. This would remove a significant barrier to the sales of Amigas, and allow the brilliance of the hardware and software to assume its rightful place in the market.

Multimedia Avenger

You may have noticed that there's a 5.25" drive bay in the front of the A4000. While the unimaginative user may fill that with a gigabyte hard drive or a Syquest removable, the Bandito invites you to think in grander terms. How about an A4000 model with a built-in double-speed CD-ROM drive that could compete effectively against Apple's CD-ROM Mac? The new breed of double-speed CD-ROM drives (from NEC, Toshiba, and soon every other manufacturer) sports a 300K/sec data transfer rate. With a 300K/sec of data blasting over to the screen, there's some potential for serious multimedia action here. Throw in the A4000's HAM8 mode to provide true color images, toss in a nifty compression scheme, and you could get full-screen, full color animations at 30 fps from a CD-ROM. How's that for a multimedia delivery system?

This could be a killer machine for Commodore's multimedia kiosk business. Of

course, if they really want to tackle the low end of that market, they could put out the Super CDTV the Bandito told you about. That's the one with AGA graphics and a faster processor that Commodore has in the works. The Bandito hopes Commodore decides to throw in the double-speed CD-ROM drives they've been evaluating. But even without that, some sort of CD-ROM is important for Commodore to do well in its target markets for the Amiga.

A Sound Decision

According to the Bandito's sources, there's a DSP (digital signal processor) card for A4000 coming up soon. Best of all, this may be standard on the (revised) A4000 model that Commodore is promising in 1993. The A4200 (working title) will add a

AGA. No more 4096-color Amigas will be introduced, so the A600 is the last of that line. You can expect AGA Amigas at all price points. Right now, the alert reader may have spotted a small gap between the A1200's \$699 list price and the A4000's \$3699 list price. The Bandito hears that gap will disappear very soon, filled in by several 68030-based Amigas. Plus the A4000T at the top of the heap, probably debuting at \$4499 (and see the A4000 drop to \$3499).

Will Commodore offer a 33MHz 68040 in the A4000T? The Bandito hears that the answer depends on chip availability, which is still very limited. Motorola should make the 50MHz version of the 68040 available this year, but don't expect Commodore to use it right away. Quantities will be limited in initial release; expect accelerator companies to offer it first. And of course, the 68060 is on the horizon for 1994; it should offer at least a four-fold advantage over the '040.

What will be the fate of the A500 and the A600? The low end of the Amiga product line seems rather crowded right now, doesn't it? Looking at street prices, we find the Amiga 500 for \$299, the A600 for \$349, the A600HD for \$599, and the A1200 for \$599 (as well as CDTV for \$499). The Bandito predicts that Commodore will be pruning this thicket pretty soon. Decisions aren't final yet, but expect the A500 to cease production so the A600 can take over the low end. By the end of 1993, the A1200 may just move low enough to make the A600 disappear, unless the A600 can maintain strong sales. But the Bandito thinks it unlikely, when anyone interested in an Amiga should really be buying the A1200 instead of the A600.

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PCMCIA slot, a high-speed SCSI-2 interface instead of the IDE interface, and possibly a DSP. What good is a DSP? For starters, you can get super high-quality audio output. Not only that, a DSP can be used for other coprocessing tasks involving signal processing, like working with live video. The big question still to be answered? Will the new board use a Motorola DSP or an AT&T DSP? Both chips are hot, and Commodore's engineers are evaluating them closely. You can be assured of one thing. The Amiga's DSP will fly rings around the one Atari included with their Falcon computer.

Amiga Line Mode

The Bandito, in reviewing Commodore's recent public statements, finds that Commodore has made an important commitment: All new Amigas will have

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1x4 - 70 SC ZIP	18.75	--	150	292
1x4 - 70 PG DIP ZIP	18.50	74	148	292
256x4 - 70 PG DIP	4.75	76	152	288
256x4 - 70 PG DIP	4.25	68	136	256
1x1 - 70, 80 PG DIP	4.25	68	136	256
1x8 - 70, 80 SIMM	36.00	72	140	280
1x8 - 60 SIMM	40.00	80	150	300
4x8 - 70, 80 SIMM	139.00	--	139	270
4x8 - 60 SIMM	145.00	--	145	280
GVP SIMM 32	199.00	--	199	390
A4000 4x8-70 SIMM	149.00	--	149	290
A4000 4x8-60 SIMM	169.00	--	169	330
PCMCIA	CALL	--	--	--
BaseBoard	--	169	239	--
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The Bandito believes it would be best for the A600 to disappear, since this would make AGA Amigas the only way to go. And that means we'd see more software that takes advantage of all that AGA has to offer. No doubt the A600 is less expensive to manufacture than the A1200, but the Bandito hopes that Commodore can take the long view here and let go of the A600. The A1200 should assume the mantle of the low-end Amiga.

While the engineering and marketing departments ponder these issues, the accountants have been busy buying red ink. Commodore lost \$18.8 million on \$158.6 million in sales in their first quarter ended Sept. 30, 1992. Compare this to \$5.3 million in earnings on \$204.1 million in sales for the same quarter last year. Commodore attributed this to bad Amiga and C-64 sales in Europe, particularly in Germany. On the brighter side of things, expenses were lower than last year; poor sales were the culprit. Commodore's PC sales actually increased over last year.

Game Over?

The Bandito hears from various sources that Macintosh entertainment software sales have passed up Amiga entertainment software sales in the U.S. Currently, MS-DOS entertainment software holds about 82% of the market; the Macintosh about 8%; and the Amiga about 6%. (The rest is probably old C-64 or Apple II software.) Both Mac and MS-DOS entertainment software sales are growing fast, while Amiga software sales aren't. Why? Probably because Amiga sales in the U.S. have slowed, particularly the A500. It looks pretty grim if you like to play games.

But there's hope on the horizon: the A1200. While the A4000 is great, it's aimed at the professional market, and not that many A4000 owners will buy a lot of games. The A1200, on the other hand, is priced just right at \$699 (street price under \$600) to sell a lot of units to game players, especially if Commodore does the right sort of advertising.

Best of all, the A1200 offers full AGA graphics, a couple of megabytes of RAM, and a reasonably fast processor. While no hard drive is built in, there is an interface included, and the Bandito expects that the vast majority of A1200s will end up with a hard drive. This is all great news for game players, because this means the A1200 is ready to handle the latest and greatest game software from those MS-DOS publishers. All

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they have to do is port the software over, a transfer that should be much easier than in the past because the A1200 has a 320 x 200 x 256 color mode just like all those VGA MS-DOS machines.

So if Commodore can sell a whole lot of A1200s—which they're gonna try real hard to do, there's a good chance that Amiga gamers will be playing all the best games. No more PC envy because your buddy has a copy of *Wing Commander* and you can't play it. (Though the Amiga version of *Wing Commander* is said to be on its way to a galaxy near you.) If the A1200 catches fire in Europe, too, that will provide more incentive for publishers to create AGA versions of their games.

PSST!

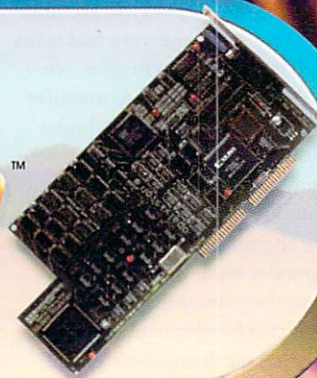
Do you know of any rumors, gossip, scuttlebutt, or just plain dirt? If so, become a professional tattle-tale and pass these tidbits on to:

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"The verdict was unanimous —brilliant."

—Amiga Shopper Magazine

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—The Amiga-Video Journal (AVID)

The OpalVision Main Board

- A true 24-Bit frame buffer and display device with 16.8 million colors available for every pixel.
- Uncompromised, 24-Bit higher-than-broadcast-quality, crystal-clear images.
- Standard Amiga graphics and animations can appear in front of or behind OpalVision images on a pixel-by-pixel basis.
- Performs double-buffered 24-Bit and 15-Bit animation in medium and low resolution modes and 8-Bit double-buffered animation in all resolutions.
- VLSI graphics coprocessor enables resolution changes, stencil modes, a host of transition effects and smooth scrolling between screens.
- "Palette-Mapped" design updates screen colors in real-time. Fade pictures in and out and change their palettes on the fly.
- Double buffered full 24-Bit, 15-Bit and 8-Bit true color modes, 24-Bit and 8-Bit palette-mapped display modes, Dual Playfield and Overlay Priority stencil modes.
- Priority mask definition specifies foreground/background areas in 24-Bit images.
- Microcode graphics processor for system control, priority switching, hardware scrolling and panning.
- 20ns video switch to freely mix Amiga and OpalVision graphics.
- Expansion connectors for available Framegrabber/Genlock and Scan-Rate Converter hardware modules.
- Expansion socket for the "Roaster Chip," a live video special effects processor.
- Automatically self-configures for NTSC or PAL operation.
- 24-Bit RGB output with video bandwidth >7 MHz. Equipped with 1.5 MB of display RAM.
- An internal card which operates in any Amiga computer with a video slot.

OpalPaint

Everyone is excited about OpalPaint. In fact, nearly everyone who's spent any time using it says it's the finest, most professional paint program on the Amiga. And with good reason. It's Fast. Real-time. Full 24-Bit. OpalPaint gives you complete control over OpalVision's 16.8 million color palette. Includes a full-range of drawing tools and an expandable library of image-processing modes with adjustable parameters, complete texture-mapping capabilities, transparency and color gradients, multiple work modes, nozzle brushes, pre-defined palettes and many other comprehensive tools. Unique and powerful features like real-world "Artist's tools" and paper types, multiple stencil types, virtual memory support and compatibility with the pressure-sensitive Wacom drawing tablet provide a level of support for artistic creativity never before available on the Amiga.

OpalAnimMATE

Our powerful new animation player lets you run OpalVision animations at rates of up to 60 frames per second. It works in 8, 12, 15, 18 and 24-Bit modes and features selectable screen sizes from 32 x 20 to 768 x 286 pixels. Features an easy Workbench interface, dynamic DMA allocation for best frame rates on slower machines and will play animations directly from a hard drive. Our delta compression feature creates small files and fast playback rates. Create 16-million color animations using your favorite 3D rendering package and play them back through OpalVision!

Also included are Opal Presents!, an icon-driven presentation program, OpalVision Hot Key, a powerful and very useful image display utility and the world's first 24-Bit game, King of Karate.

Amiga Developers Create OpalVision Software

OpalVision displays all standard IFF 24 images and is instantly compatible with virtually all Amiga 24-Bit software. At the same time, all of the important Amiga developers are creating new versions of their programs which directly support OpalVision-specific, advanced features. Here are just some of the titles that are already available or soon to be released:

Activa International - Real 3D
ASDG - Art Department Professional and Morph Plus
Adspec Programming - Aladdin 4D
Black Belt Systems - ImageMaster
SCALA - MultiMedia 200 and InfoChannel
GVP - Image FX and Cine Morph
Octree Software - Caligari 24
RGB Computer & Video - AmiLink Video Editing Products
Amazing Computers - Transporter single frame recording software
Texture City - Texture City 24-Bit image libraries
TecSoft - TV Paint
Progressive Peripherals and Software - 3D Professional

OpalVision also works with the Amiga 4000 and the AGA chipset!

The OpalVision Main Board is the core of a complete video system.

Enhancement Modules are on the way which add exceptional graphic and video features to the OpalVision Main Board. Create a complete video production studio by adding some or all of the OpalVision Expansion modules. The modules connect directly to the Main Board without tying up Amiga slots.

Frame Grabber + Genlock Module

24-Bit real-time framegrabbing and better-than-broadcast-quality genlocking with S-Video, RGB and composite inputs and outputs. Real-Time video effects, transitions and color processing.

Quad-input Production Switcher

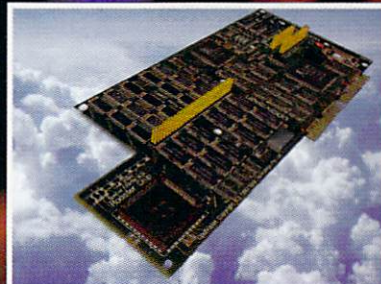
Complete video switching capabilities. Includes four S-VHS, four composite and one RGB input. Three outputs: Composite, S-Video and RGB. Combine two live video sources, 24-Bit OpalVision and Amiga-generated graphics.

OpalVision Scan-Rate Converter

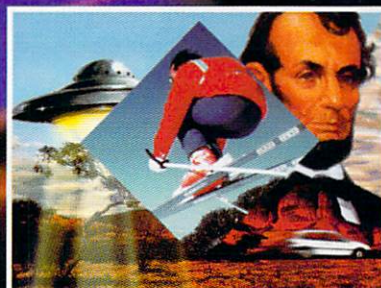
Perfect for desktop publishing and graphic arts applications. Generates flicker-free 24-Bit and Amiga graphics. Can also be used as a separate 24-Bit frame store for multimedia applications.

OpalVision Roaster Chip

Amazing, complex Digital Video Effects. Real-time processing of live video. "Picture-in-Picture" capability. Includes pre-made effects and provides for the creation of custom effects.



OpalAnimMATE offers real-time playback of animations created by ray-tracers, landscape generators, morphers and all other 24-Bit software.



OPAL PRESENTS! includes numerous built-in transitions for image sequencing and presentation. It also triggers CLI and AREXX commands.



The OpalVision Roaster Chip transforms any video signal in real time. A wide variety of complex DVE's are included, or create your own!



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WORLD OF COMMODORE AMIGA TORONTO

December 4-6, 1992

The World of Commodore Amiga show in Toronto celebrated the tenth anniversary of the World of Commodore in Canada. Commodore's booth was teeming with special displays to celebrate the anniversary. Most interesting was the

"History of Commodore" display which featured every Commodore product from typewriters to calculators and the VIC 20 to the Amiga 4000. Two Virtual Reality machines were also in Commodore's booth as well as the Mandala system. Their full line of Amiga and PC products were on display including CDTV. The A4000 and the A1200 drew quite a bit of attention. Loyal Commodore fans wanted to see first-hand what these super new machines could do. They also wanted assurance of support for their old machines. This strong showing of support by Commodore gave Amiga owners a good sense of security and confidence that Commodore was bringing their favorite machine down a road to success.

Fairbrothers Software featured their complete line

of products including *Audio Gallery*, a series of graphic-based talking dictionaries, and *Courtroom*, a legal affairs simulation.

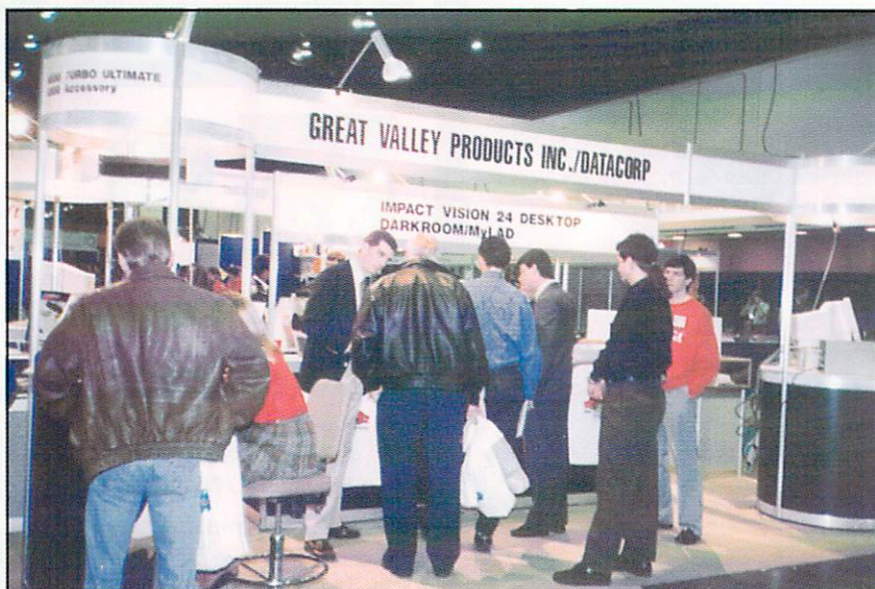
Digital Creations displayed *Brilliance!* (\$249), their new Amiga paint and animation program specially designed for the new graphics chip set. Features include optimal performance and speed; support of all Amiga graphics modes including 24-bit, 256-color, and 8-bit HAM; multiple picture and animation buffers; multiple levels of Undo and Redo; dynamic animation capabilities; and much more. *CDTV* was also demonstrated.

Electronic Arts displayed their new version of *DeluxePaint*. For artists, animators, and video professionals working on the Amiga 4000 and 1200, *DeluxePaint IV* AGA now provides more colors at higher screen resolution. Now you can paint and animate with 256 colors in all screen resolutions. Even better, *DeluxePaint IV* AGA allows access to over 262,000 apparent colors using HAM8 mode at any resolution. Retail for \$199; upgrade for \$39.

Electronic Arts also featured a new game called *Road Rash*. *Road Rash* is a combination of fast street-bike racing and combat. Kick and punch your opponents off the roads at speeds of 150 mph. Race against 14 opponents in the most illegal, unofficial, and dangerous races on various California backroads! Don't worry about the rules—there are none! Retail price is \$49.95.

Expansion Systems displayed the *DataFlyer Express* and *BaseBoard 601C*. The *BaseBoard 601* is specially designed memory upgrade card that will increase the chip memory of your Amiga 600 from 1.0MB up to a total of 2.0MB. This takes advantage of the 2MB Agnus and allows the use of 1MB games when using the Amiga 600 hard drive. The *BaseBoard 601C* will, in addition to the memory, also add a

Excited attendees watch a demonstration of the IV-24 board in GVP's booth.



battery-backed clock.

GVP featured their complete line of Amiga products. GVP's memory expansion and accelerators, *Image FX*, and the *IV-24* were among those items shown. Also on display were the new *PhonePak* and the *G-Lock*. A complete ImpactVision workstation showed some of the unique features and uses of the card, and the PhonePak VFX voicemail/fax demonstration showed the potential of that interesting system.

AmiWare offers complete *Video Toaster* training, support, and repair. They offer installation, on-site training, telephone support, and service specials and warranties. AmiWare also offers training packages for *DeluxePaint*, *Pixel 3D Professional*, *Art Department Professional*, and *AmigaDOS*.

ICD was showing the *Trifecta* high performance 16-bit IDE (AT) hard card for connecting low-cost IDE hard drives to an Amiga computer. Quick block transfers combined with intelligent caching make IDE drives on this card as fast as or faster than most 16-bit SCSI cards. The hard card configuration has ample physical space and mounting holes to attach a 2.5- or 3.5-inch hard drive to the board. One or two drives are supported on this IDE interface while up to seven drives are supported by Trifecta's SCSI interface. Prices range from \$199.96 to \$349.96. They also displayed the KickBack ROM switcher.

INOVAtronic's showed *Directory OPUS 4.0* (\$99.95), a major revision of their Amiga disk and file management utility. Along with A4000 and A1200 compatibility, increased audio/image file support, and many new features, *Directory OPUS 4.0* is now more intuitive, more helpful, and more flexible than before. You can even completely re-configure the interface to suit the way you want to use the program. *CanDo 2.0* was also on display. The new version includes many enhanced developer tools and a completely new user manual designed to simplify understanding and access to CanDo's extensive feature set. New features include a 400-page, fully indexed manual; Script Bookmarking; SuperDuper; SOS Notify; 68040 Support; and much more. Inovatronics also showed other products such as *Vektor Storm*, *GigaMem*, and *TurboPrint*.

Migraph featured the *PS-400* monochrome scanning wand. It comes bundled with *Touch-Up* and *Migraph OCR*. Its features include: full-page scanning with an

8.5-inch x 14-inch scanning area; three text scanning resolutions; compact interface which uses the parallel port; four dither patterns for scanning colors and halftones and one line art/text setting; and more. Also on display was *Migraph OCR Jr.* and their complete line of scanning products.

The Media Innovations booth featured some big names in the Amiga market. There you could see demos of *MorphPlus*, *SuperJam*, and several other top Amiga programs. The *One-Stop Music Shop* is the latest addition to the line of musical products from The Blue Ribbon Soundworks. It catapults you and your Amiga into the world of professional, CD-quality stereo audio. Featuring the E-Mu Proteus SoundEngine, the One-Stop Music Shop includes hundreds of 16-bit linear CD-quality digital samples compiled from vast libraries of sound. Each sample has been professionally recorded, looped, and edited to optimize the quality and variety of included sounds.

Two hot ASDG products on display at the booth were *Art Department Professional* and *Morph Plus*. *TruePrint 24* was also among the ASDG products. *TruePrint 24* allows you to print poster-sized printouts and also improves the quality of the print.

Pre'Spect Technics was featured in the Micro R&D booth. They displayed items such as the *MultiFaceCard*, designed to eliminate the problem of restricted I/O that is inherent in all Amigas, and *Naked DF*, which allows you to run nearly all the fast SCSI controllers built for the Amiga 2000 on your 500 or 1000. The card solves the timing problems that the 2000 boards would otherwise have. SCSI can now be used at full speed.

Axiom Software displayed their latest version of *Pixel 3D Professional*. Use PixPro to convert bitmap pictures of logos and shapes to 3D objects as well as to load, save, and display 14 different 3-D file formats, including Caligari, DXF, and Wavefront. Clean up and optimize your 3-D objects with the PixPro collection of data reduction tools. Powerful point editing provides for the perfect placement of every point on 3D objects.

The Dineen Edwards Group proudly displayed their *REXX PLUS Compiler*. There are three main goals of the REXX PLUS Compiler: 1. Faster execution of the Compiled programs, without hampering the speed of the interpreted programs. 2. REXX Programs previously written can be

compiled and executed without interfering with any interpreted code. 3. Provide a transparent interface to the user, so the user doesn't have to determine if the program is compiled.

Soft-Logic featured their complete line of desktop publishing software. A new item, *TypeSmith* (\$199.95) brings professional font editing capabilities to the Amiga. With *TypeSmith*, users can edit and create PostScript, Compugraphic, and Soft-Logic outline fonts. *TypeSmith* offers the ability to save in these formats or exports the font in PostScript Type 3 format. It has powerful drawing tools to create new fonts and can also import characters and symbols from structured drawing programs. In addition, bitmap pictures and Amiga bitmap fonts can be loaded as templates for tracing.

Art Expression (\$249.95) offers the ability to convert and load files from *Professional Draw*, *Aegis Draw*, *ProVector*, and *Adobe Illustrator*, in addition to Art Expression's own PostScript files. Art Expression also loads and saves illustrations in Encapsulated PostScript and IFF DR2D for importing into programs such as PageStream. Art Expression is complete with BME 1.1 with Trace.

PageStream 2.2 has enhanced its import module and printer driver support to provide users with a wider selection. Support for plotters has been added, allowing sign cutters as well as plotters to output PageStream documents. *PageStream 2.2* has improved Type 1 extended character set support, and offers a faster font/point dialog box that will display quickly. Finally, *PageStream 2.2* supports the HotLinks interface. *PageStream 2.2* retails for \$299.95.

HotLinks 1.1 includes: *HotLinks*, *BME with Trace*, and *PageLiner*. *HotLinks 1.1 Editions* (\$150) also has redesigned requesters that provide more edition information and ease of use. The Publish and Information requesters use a pop-up menu to switch between blocks of information. *HotLinks* follows the latest Amiga interface guidelines and is Workbench 3.0 compatible.

Opalvision was the main attraction in the Centaur Software booth. *Opalvision* is an exciting 24-bit graphics and video system. Demonstrations of *OpalPaint*, *OpalPresents*, and the new animation player, *OpalAniMATE* were given to the booth's visitors.

(Continued p. 86)

bar graph peak type meter, and a waveform graph that displays the highs and lows of a signal in real time.

The Mixer and Tiny Mixer modules control playback levels of the four individual channels and the overall output of the AD1012 board. The input slider will let you mix external audio with the samples already recorded.

While the Mixer modules let you control the audio output, the Recorder module lets you make your settings for processing and recording incoming audio. You can set the sampling and filter rates, signal level, monitor the sound before recording, and actually record to your hard disk. The Auto Filter feature causes the filter rate to "track" the sampling rate at half the sampling rate. This keeps things within the dreaded Nyquist limit, a rule that states the maximum frequency response of any sample shall be no greater than half of the sampling rate. When you exceed the Nyquist limit, you can get all sorts of audio garbage

is you'd like to massage, you'll have to load your samples into the Studio 16 editor to make your changes.

The editing features of Studio 16 will be familiar to anyone who has worked with 8-bit sample editor packages on the Amiga. The bulk of the editor is devoted to displaying the graph of your sample. A status display describes the size and playback rate of the sample, and beginning, end, and length of the selected range. This information will be given in either number of samples or in SMPTE format. You can play the whole waveform, define and play a range of the waveform, then cut and paste the range as though it were a bit of text in your favorite word processor.

Many of the editing features of Studio 16 can be performed in a non-destructive way for auditioning. This lets you hear the change you're considering without having to commit to it beforehand. Some of the non-destructive editing commands included zooming in and out of the range; adding silence to the end of the waveform; drawing changes to the waveform freehand; boosting

of a "good destructive" type of command. When you've edited all the unwanted material from your sample, Compress will save the file in a smaller format and delete the old file. Some functions can be performed only in destructive mode. Any edit between samples, for instance, can be accomplished only in destructive mode. "Destructive mode" may not have been the best choice of terms for those of us prone to panic and high anxiety. Just think of destructive mode as the mode to use when you want to make a permanent change to your sample.

Effects for Real

Any 8-bit sample editor worth its salt will let you process your sample through a slew of internal effects, and Studio 16 is no different. Unfortunately, the version of the Realtime Delay module included with my copy of Studio 16 was a preliminary demo, so other modules could not be run at the same time. Also, as the name indicates, this module will work only on live signals. Still, it gives you an idea of what Studio 16 will be

The modular approach of Studio 16 is very appealing. You can keep commonly used Modules always open and less regularly used Modules available from the Instance list.

This minimizes screen clutter and conserves memory.

included in your sample. This feature of Studio 16 makes it easy to stay within the limit, while still giving you the capability to break the rule if you desire.

The Transport window is where you put it all together in Studio 16. You can load your samples into individual tracks, record new samples, bounce tracks, and even record the cue list. The Transport window can serve as a central switching station for all your recording and playback functions. The manual provides tips for recording a new sample while playing previously recorded samples, and for bouncing samples down to one track.

Editing Magic

Unless you get very lucky, you'll need to edit some aspect of the material you sample. You may want to cut out the dead space at the beginning of the recording, repeat certain passages of your sample, fade out or reverse the waveform, etc. Whatever it

or cutting the signal strength of the sample; changing the playback rate and filter frequency; and cutting, copying, pasting, and erasing a range and keeping a range. All non-destructive edits can be reversed with the Undo button, which toggles the last edit on and off, or the Begin button, which removes all non-destructive edits and restores the sample to its original form.

Some of the edit commands make permanent changes to your file. These are called destructive edits in Studio 16 parlance. Until you feel comfortable with Studio 16, it's advisable to work with copies of your files. Destructive edits allow you to fade the range in and out, scale the volume of the sample, flip a range so it plays backwards, and add a clip to the end of a sample. The regular cut-and-paste features can operate in destructive mode as well. There are advantages to using the destructive form of some edit commands, obviously, or they wouldn't be there. Compress is an example

capable of when the module is fully integrated into the system.

Incoming sounds can be processed through a variety of flanging, chorusing, and delay effects, with full control over the length, volume, and regeneration of the delay itself, and over the rate and delay of modulation. The effects are clean and some of them are pure audio inspiration; try Watch It and Waverly. Most of these effects will be effective only when processing pre-recorded material. You won't hear much if you plug in a microphone and process your voice.

Studio 16 allows you to cut and paste across samples. If you like a part of one sample and would like to tack it on to another sample, simply open two edit windows, copy or cut the desired range from one, mark a starting point for the insert in your destination window and click on paste. All edits between samples are destructive.

Save It Any Way You Want

Samples can be saved in a variety of formats. Studio 16 saves every file in AIFF 16-bit format, even though the AD1012 board is a 12-bit board. You can also select AIFF 8-bit, to save disk space; standard Amiga IFF 8SVX format for use with programs that support the Amiga internal sounds standard; RAW and CDTV RAW format, mostly for use by programmers.

The Basics of Audio for Video

The AD1012 and Studio 16 package can read LTC at 24, 25 and 30 (non-drop) fps. If your SMPTE source generates only VITC, you'll have to get a VITC to LTC converter. Just plug your source in to the SMPTE in jack on the AD1012 board, select your fps from the Master Preferences in Studio 16 and you're ready to go. This means is that it is now possible for the writer of music and the videographer to effortlessly synchronize music and sound effects with video tape using the video synchronization standard. All you need is the right hardware and software.

Suggestions for Improvements

The combination of the AD1012 board and the Studio 16 software is a powerful audio for video tool as it stands. So what can we suggest to make it better? If I could wave my magic wand, here's what I do to make this powerhouse combo even stronger.

For starters, I'd change the way samples are entered into the CueList. Hitting Duplicate, then erasing the string gadget, then typing in your next selection smacks of heresy in an Amiga product. Why not click-and-drag your selections from the Open Sample list and drop them into the Cue List window? Speaking of click-and-drag, how about a similar method of setting the start point in the SMPTE generator? Clicking repeatedly on the fast forward and rewind buttons gets old really quick.

Next, I'd add a SMPTE out jack, unless this would considerably increase the price and complexity of the products. As hard as this may be to believe, there are some people with Amigas that aren't that interested in video, but would be interested in striping multitrack audio tape to synchronize music production work. Why not let the Amiga be your timing source? As it is now, you'd need an additional product to stripe audio tape for locking a MIDI sequencer to SMPTE code.

While we're on the subject of jacks in the back, can we talk about the apparently overwhelming urge to use phono connectors on computer products? I don't know of any pro-level sound generators that use RCA-

type plugs and jacks exclusively to get audio or data in and out. Unless you're going to use only your home stereo equipment as a sound source, you'll need some adapter plugs and cables to connect the 1/4" or XLR connectors on your MIDI gear to the AD1012.

Many pro-level mixing consoles and computer sequencers will memorize fader movements and store them off for use later. This is mighty handy when you're trying to manage lots of tracks of differing signal strength at the same time. While it is not as severe a consideration when dealing with only four tracks, Studio 16 could benefit from such an addition to the features of the Mixer modules. Some samples need a boost here, a cut there while they're playing. A nice non-destructive "riding gain" feature would be appreciated.

There are some missing parts to Studio 16 that shouldn't be missing. The Editor window should have an auto-scrolling option. SMPTE Capture should be able to mark a range beginning and end on the fly. While realtime effects are wonderful, being able to process and save a file is infinitely more useful. Let's get this portion of Studio 16 up to the level of your garden variety 8-bit sample editor at least.

Conclusions

So is this thing cool or what? For its intended audience, the video professional looking for entry-level but high-quality audio, we give it an enthusiastic thumbs up. The Studio 16/AD1012 package compares favorably with similar products on other platforms in the bang-for-the-buck department. While some products available for the Atari, MacII and PC platforms may offer better sampling rates, dedicated hardware controllers, more virtual tracks, digital I/O, and the like, none of them offers a more comprehensive package for the money. And at a projected list price of \$1495, the AD516 will address whatever concerns there may be about 12-bit vs. 16-bit resolution, and still weigh in at one of the lowest prices on the market today.

Many pro-level recording studios have Macintosh-based audio systems that do nothing but process audio. It's not unreasonable to envision a similar product based around the Amiga and this hardware-software combination from SunRize. The trail has already been blazed by New Tek. A turnkey computer workstation that included a Toaster, the AD1012, and Studio 16, plus Bars & Pipes Professional could do just about anything that an audio/video post house could ask for.

If your 8-bit audio is sounding a bit cheesy behind some of the amazing graphics you've been creating on your Amiga, I'd highly recommend looking into the AD1012 card and Studio 16 software. The difference is remarkable.

Special thanks to Pete Reuter and Colleen Case of CMC Inc., a media consulting firm in Livonia, MI, specializing in computer interfaces; Ken Sands, Head Audio Engineer at the Palace of Auburn Hills; and Ian Swanick and Dennis Wolfenbarger of Slipped Disk Computer Club and MultiMedia Center in Madison Heights, MI, for their assistance in describing and testing audio, video, and SMPTE-related features of the AD1012 board.

Note: Studio 16 version 2.0 should be shipping to registered owners by the time you read this. Many of the questions raised in the review are addressed in the new release. Changes include full ARexx implementation, Amiga menus and hotkeys, the ability to drag samples from the Open List and drop them into the Cue List, the ability to define and save regions of a sample, a new manual and full tradeup value of your AD1012 toward the AD516, which should also be available by this time. You'll be able to record at least five tracks with an A2000 and up to eight tracks with an A3000. You'll need a large capacity hard drive to take full advantage of the AD516's capabilities. At roughly 5MB per minute per channel, you'll need 40MB available on your hard drive to record one minute of 8-track audio. Luckily, gigabyte hard drives are no longer out of the reach of professionals who require them, or hobbyists who would like them. Contact SunRize for more information.

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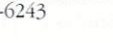
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Eye of the Beholder II—The Legend of Darkmoon

by David Slonosky

The conversion event of the year for many 3-D dungeon game lovers is here. Strategic Simulations Incorporated, in conjunction with Westwood Associates, has released *Eye of the Beholder II*, or EOTB II for those of us who played EOTB I. Does the game live up to its ads in all the computer magazines? Read on and find out my humble opinion.

The game comes packed with a standard animated introduction in which Khelben, Archmage of Waterdeep, calls you in and tells you of your mission, then teleports you off to the area of Temple Darkmoon to investigate the rumors of the odd goings-on there. Along such matters, I'd like to know why these ultra-powerful good people who send you on these quests never go out themselves. I mean, Khelben could probably wipe up 90% of the Temple by himself, leaving your characters in reserve for the final 10%, you know what I mean? But then there'd be no conflict, hence no story.

If you're playing from floppies and not installing the game to your hard drive, let me repeat this basic warning in the

manual: make backups of your original disks. For some reason unknown to me, after you make a discovery almost at the very start of your quest, the program wants to write to disk 1. I also would like to state that, like the first game, the program will run quite happily on a 1MB Amiga 500 with hard drive and only around 835K of memory free, something most other dungeon games cannot claim.

Once you're in the game itself, the mechanics of fighting, spell-casting, and so on are exactly the same as in the first game. Clicking the left mouse button on an object picks it up, while clicking the right mouse button on an object in your character's hand attempts to perform the appropriate action for that object. For example, right mouse button plus sword means the character tries to swing the sword; right mouse button plus spell book results in a spell menu appearing; right mouse button plus potion has your character gulping the potion down; and so on.

The characters as well are the same as in the first game—meaning that they must choose a profession at the start of the game and stick with it for the whole game. In character-casting I prefer the open-ended approach of *Dungeon Master*, where everyone could end up doing healing, wizardry, fighting, and thievery as long as he practiced the skill enough, but EOTB II is locked into its TSR role-playing origins and follows

them pretty closely. Human characters must choose a single profession, like fighter, magic-user, or cleric, while other races like elves and dwarves can combine classes, such as fighter/magic-user/thief.

Single-classed characters will advance in power more quickly, as they do not have to split up experience points equally among multiple classes, but multi-class characters do give you a flexibility that gives your party an edge sometimes. Since you start out with four characters, it's best to have a good balance among them, although you do find non-player characters in the dungeon to flesh out your party. You can pick only two of them to add to your ranks, though, so choose wisely, although the game allows you to drop your player characters if you think an NPC would make a better addition.

How about the game itself? I started off actually enjoying playing it. They have added some neat animation sequences at certain points when you interact with the characters in the game, and the graphics and detail are quite good. I can commend S.S. on their depiction of Dran Draggoth, particularly. There are also some fresh twists on some old 3-D game themes, such as when you meet Insal for the first time. I won't spoil your fun by telling you what happens; just say that it annoyed me a bit but also gave me a chuckle.

However, as the game goes on to the lower levels, it seems

the game designers abandoned giving you interesting puzzles to solve and instead took the easy way out and filled them up with nigh-unbeatable monsters instead. Too many times I found myself saving a game, advancing and praying the law of statistics would make my spells work better than the previous time when my party was toasted almost immediately. When you get to a certain point in the temple, you won't believe how fast mind flayers can reproduce.

And, like some parts in EOTB I, when you get to a hard puzzle, there are no clues anywhere to be found on how to solve it. Your characters will now often sing out when they spot a secret door or misplaced brick, but they only do this in areas where it is essential to your quest that you get through. In that sense, then, there are really no puzzles in this game that you need to solve because your characters will always tell you when there is an area you need to find. Like the first game you don't need to go through every puzzle area to finish the game, but I am still curious about what's behind that force wall on the third-to-last level, and I don't think I'll ever bother finding out what is behind all those mind flayers.

Synopsis? EOTB II is an average 3-D dungeon game. It starts out with promise but fizzles once you get deeper into the dungeon/temple. I would be happier seeing a game produced that gives you play value by

DIVERSIONS

requiring you to solve puzzles rather than fighting monsters in situations where your party is sure to fail two times out of three. I also like having all the puzzles on the necessary path of the quest, but then I guess one doesn't sell as many hint books that way. However, other people I know delight in carving monsters into fillets, and if you're like them you will doubtlessly love this game. As for me, there are other dungeon game-design philosophies I prefer, as in *Dungeon Master* or *Black Crypt*, so unless EOTB III comes out much changed from this present offering, I don't think I'll be buying it.

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Fighter Duel Pro

Rob Hays

Just over a year ago, Jaeger Software set the Amiga flight simulator community on its ear with the release of *Fighter Duel*. The silky-smooth control response and high-resolution interlaced display combined with accurate flight modeling of the aircraft was like nothing else available. Now Jaeger has released *Fighter Duel Pro*, and it's bigger, tougher, and meaner than the original.

Whereas the original was set in the Pacific with takeoffs and landings done from aircraft carriers, with Pro you get a choice. In fact you get a lot of new choices. You can fly from the carriers or from land bases. Choose from 16 American, British, Japanese, and German planes to fly and fight against. Included are the famous models everyone has heard of, and a Japanese model that only existed as a prototype before the war ended. Choose one or two computer opponents, each with four skill levels. You can also select between analog or digital

joystick, with three levels of sensitivity for each, plus an almost crash-proof setting for beginners. You now have the option to use rudder pedals instead of the mouse for rudder control.

One of the unique things about the original *Fighter Duel* was the viewing system. All you had to do in order to look around was hold the right mouse button down and move the mouse in the direction you wanted to look. This caused the view to pan smoothly, as if you had simply turned your head. *Fighter Duel Pro* has improved on this system by allowing you to activate the view whether or not the horizon is visible. You can also pan the view past the vertical, and you retain full control over the plane while viewing.

New to Pro is a replay feature that allows you to review the last 60 seconds of your flight any time the game is paused, so you can see the mistake that caused you to crash or get shot down. Also new is the ability to connect two Amigas together via their parallel ports and an optional \$15 adapter, and dedicate one Amiga for a full-time rear view. This lets you see if anyone is trying to sneak up

on you. The option of dueling via modem has also been retained from the original. This feature proved so popular that nationwide tournaments sprang up almost immediately.

One of the disadvantages in the original implementation was that opponents started at random altitudes and opposite sides of the playing area. This often resulted in long searches for your opponent, usually while paying long distance phone charges. A new tournament setting starts both planes at the same altitude heading straight for each other. Also, available in single-player mode is a new turbo option that lets you get your plane to the scene of the action at 16 times normal speed.

Fighter Duel Pro owes many of its features to comments made by users of the original. In fact, Jaeger Software has rapidly established a reputation for customer support that is almost unparalleled in the computer industry. A company representative maintains a presence in the Jaeger Support Category on GENie, and most of the tournaments are coordinated through there.

By the time this is published, Jaeger Software should also have a new program called



Flight Recorder. This will include the Fighter Duel Pro program and allow you to record and save up to 45 minutes of flight time images from Fighter Duel Pro. If you are a Video Toaster Lightwave user, this program will also output Lightwave motion paths at 30 frames per second resolution. This will let you fly objects, lights, and camera viewpoints just like a plane, and should save a considerable amount of time in creating complex scenes. It will also convert these to Videoscape Object format.

As good as Fighter Duel Pro is, there are still areas that can be improved. Most glaring of these is the way bullets are shown. In real life if you fire the guns in a plane that is turning, the stream of tracers will curve. Unfortunately in Pro the guns act more like intermittent laser guns, with the tracers moving in straight line no matter how you twist or turn the plane.

As I said in a previous review, flight simulator programs show the art of compromise like nothing else. With Fighter Duel and now Fighter Duel Pro, Jaeger has had to compromise in areas such as cockpit display, in order to achieve unprecedented levels of performance in other areas. For example, the game plays as well on an Amiga 500 as it does on the new Amiga 4000. With modem play you also get full performance with a 1200 bps modem.

Fighter Duel Pro comes on three disks and includes a 65-page manual. The manual includes sections on general flight theory and performance charts on the planes. Copy protection is look-up-the-word, and Commodore's new hard disk installation program is included for painless installation. Pro requires Kickstart 1.2 or later, a joystick, and 1MB of memory, with some performance enhancements if you have

additional fast RAM. Modem use requires an external modem, as the game does not multitask and will not utilize any internal modems.

There may be flashier flight simulators, but none will give you the feeling of actually flying WWII fighters like Fighter Duel Pro.

Treasures of the Savage Frontier

by Daniel Greenberg

There's trouble in the Forgotten Realms again. A tyrant is reaching out for domination, and crushing the thousands of innocents in his path. The heroes who triumphed in *Gateway to the Savage Frontier* are summoned (magically, of course) to deal with the grave crisis. And just when you thought you could relax after your original victory at Ascore.

The Forgotten Realms make up a richly detailed fantasy world and provide an excellent background for high adventure. The world is steeped in colorful history, and is not as relentlessly grim as the Dragonlance world. And it has great names like Neverwinter, Mirabar, and Waterdeep.

The game picks up on the site of an earlier battle, where brave rebel dwarfs are battling a vicious usurper. It looks like a simple operation to mop up after the great victory in *Gateway*. But matters quickly get complicated, betrayal rears its ugly head, and a new quest begins. Winds of war are blowing across the land, and it looks like even allies from *Waterdeep and the Lords'* Alliance are pillaging the land. Only you can save the people from the coming bloodshed.

As your party treks over land to join the wizard Amanitas, you'll see one of the new features of this game: weather. Effects of the seasons can change unpredictably, and slow you down with snow drifts. This adds nicely to the flavor of the game, and sets it apart from earlier AD&D offerings.

Another new feature is combat reinforcements. Since the game takes place in the shadow

of a great, gathering war, combatants from both sides come running at the sound of battle. Enemies crash your private fights, but fortunately, so

do allies. This takes some getting used to, since the heroes are often blocking the hallway and the reinforcements spend the battle pointlessly standing guard



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in the back of the party. Thanks a lot, guys. But with minor modifications to your tactics, the reinforcements can be a real asset. If you can successfully pull back and blast away from the rear, they make great cannon fodder, er, frontline fighters.

The best improvement is on the storytelling front. *Treasures of the Savage Frontier* adds a special new feature in character interaction: romance. This allows computer players access to one of the better features of pencil-and-paper Dungeons and Dragons games, and makes the storytelling come alive. *Treasures of the Savage Frontier* also reflects the original role-playing game by allowing more free exploration of the world.

The portrait art is a lot of fun. It's a little more whimsical and exaggerated than the usual somber, heroic realism art style of most fantasy games, but it works very well and sets the mood perfectly. Unfortunately, the background art in the 3-D window is lackluster at best, and does not compare favorably to the improvements made by *Dark Queen of Krynn*.

Other than the new features of greater NPC interaction, random weather effects, and reinforcements, the *Treasures* game engine is just like the rest of the Gold Box series. Much of the game is played out with a combination of text and graphic windows. A small window shows a 3-D view or a map view, and combat takes place in a full-screen window.

Despite the advances in gameplay, the Gold Box system is really starting to show its age. Other SSI games improve further on the game system, and new engines like *The Eye of the Beholder* are revitalizing it completely, with a greater emphasis on graphics.

The manual is slightly more substantial than average, with a gazetteer to describe the cities of the *Savage Frontier*. This additional background helps bring the fantasy world to life and adds to the atmosphere of the game. The character pictures sprinkled throughout the manual also help set the tone.

Like the other AD&D games, you can import your last party of heroes; in this case the champions of *Ascore* from *Gateway to the Savage Frontier*.

The game requires a Megabyte of memory, and is protected by a manual lookup. The only real problem with the game is that it is designed to run only from floppies. There is no hard drive install program. Despite this glaring omission, you can still play from a hard drive by copying each of the three disks into a hard drive partition, assigning each disk name (including TSFsave:) to your partition, and running the game's start-up sequence.

Treasures of the Savage Frontier has good play value, and will keep D&D and *Forgotten Realms* fans entranced for many happy hours.

Vektor Storm

by The Way

Remember *Tempest*?

Remember the fun you had playing the arcade game or the Atari version? Well *Tempest* is long gone but its spirit lives on in *Vektor Storm* from INOVAgames.

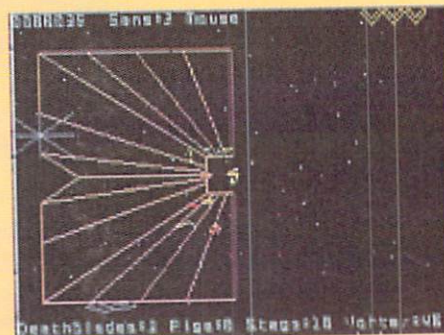
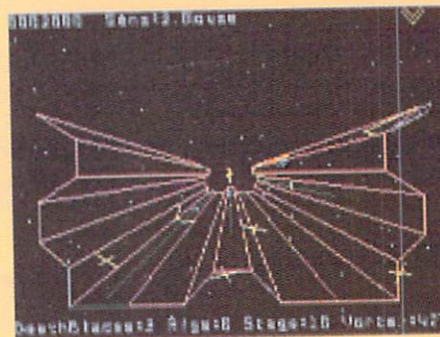
In *Vektor Storm*, you move your ship around a grid, all the time firing at "enemies" which come at you from the center of the grid. You are given an unlimited supply of regular ammunition and three death blades. The death blades will wipe out everything on the grid. The goal is to kill all the enemies coming out of the center of the grid. When they are all dead, the mother ship will warp out of the center of the grid and your ship follows her to the next level. Along with the enemies are several items to help you. Letters, "T," "L," "W," "E," and a "?" will bring you things like extra fighters, lasers, a triple-barreled fighter, or warp you out of the current level. The "?" is not

always as friendly. It can give you the same resources as the letters as well as restore your death blades and give you a shield or it can take away your rapid fire.

The game is simple to use and learn. It follows in the tradition of the old-style shoot-em-up space arcade game. The graphics are basic, outlines for the grid, the mothership, your ship, and all the projectiles, set on the backdrop of a star field. There are three methods of play; you may use a joystick, mouse, or keyboard. Of the three, the mouse is the easiest to use. The original arcade game could be found with either a track ball or a control knob for movement. The easy side-to-side motion of the mouse allows for quick movement left to right. The game also allows the left mouse button to become a rapid fire button. The joystick tends to limit the speed at which you can move left to right and the keyboard was too difficult.

Concerns

The manual accompanying *Vektor Storm* is printed on a small card. This is not a real problem since the game does not



need extensive instructions. The instruction card indicates that the game is hard drive installable via an included HD install program. I could not find the install program anywhere on my disk. I attempted to install the program by dragging the files on to my A600's hard disk. The transfer was successful, however, I was not able to get the game to run from the drive. I attempted to do the same from an A3000 just to see what would happen. The game did run off the hard drive but there was a thick white stripe down the center of the screen while the game played. Booting the game from the floppy works fine.

I ran Vektor Storm off the floppy on my Amiga 600HD without any major problems. The speed of play was very fast.

The game crashed only a couple of times. It didn't do it enough to easily identify the problem and when I tried to make it crash, it wouldn't.

Conclusion

For a fast action arcade style space adventure, Vektor Storm is great. It combines the classic styling of hit arcade games with the speed and performance of the Amiga. Vektor Storm is definitely a good play.

Product Information

Eye of the Beholder II
Strategic Simulations
Distributed by Electronic Arts
675 Almor Ave. Ste. 201
Sunnyvale, CA 94086
(800) 245-4525
Inquiry #239

Fighter Duel Pro
Jaeger Software
7800 White Cliff Terrance
Rockville, MD 20855
(301) 948-6862
Inquiry #240

Treasures of the Savage Frontier
Strategic Simulations
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Sunnyvale, CA 94086
(800) 245-4525
Inquiry #241

Vektor Storm
Inovatronics, Inc.
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#209B
Dallas, TX 75231
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Thousands flocked to see the latest products from Commodore and their favorite Amiga developers.

Gold Disk debuted two new packages which featured support for the AGA chip set. The latest release of *Professional Page*, ProPage 4.0, boasts AGA support and a host of other improvements. *PageSetter 3* joined Professional Page 4.0 with AGA support. *PageSetter 3* is a low-cost page layout, word processing and graphics system. Also on display from Gold Disk were *VideoDirector*, *Professional Draw 3.0* and *Professional Calc*.

Hypermedia Concepts was present, displaying their Fred Fish CD-ROM collections. The disks feature all of the Fred Fish disks, conveniently cross referenced and indexed, all on one CD-ROM. Two versions of the CDs are available, one for personal use and a special on-line disk designed for use on bulletin board systems. The disks are updated every four months and subscriptions are available.

Micro R&D displayed several different products. They showed the latest items from Omni-Eureka as well as their own power supply products for the Amiga.

Premier Software displayed their collection of Amiga Public Domain and Shareware disks. Programs from all different areas were featured. Some categories included telecommunications, utilities, graphics, and video.

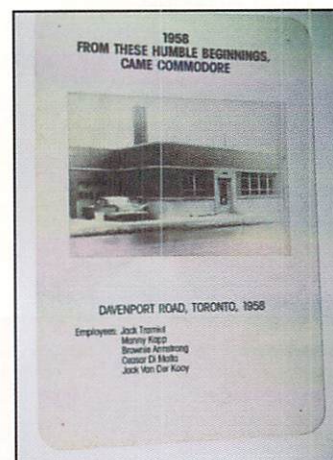
The complete line of *Fusion-Forty* products was on display from RCS Management. *Fusion-Forty Accelerators* for the Amiga 2000 were demonstrated.

Scala, Inc. announced the shipping of *Scala MM2000*. The *Scala MM2000* release marks a significant improvement over previous releases of Scala. Improved transitioning, easier scripting, and sound

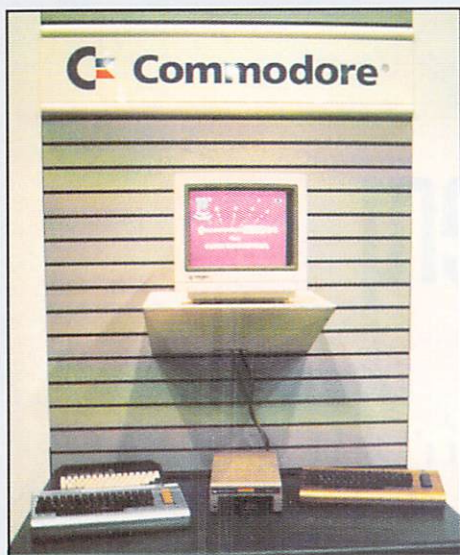
capabilities are just a few of the improvements to this package. Scala remains the easiest multimedia presentation package available.

Merrill Callaway, author of the *ARexx Cookbook*, was on hand to answer questions concerning ARexx and the Amiga and sold quite a few of his books. The *ARexx Cookbook* has been moving rather well and is praised by most as the best guide to ARexx available. The *ARexx Cookbook* is a tutorial guide to the ARexx language.

The Amiga Users of Calgary hold their own computer show. They were at the World of Commodore plugging their show, called AMIJAM '93.



The History of Commodore



The History of Commodore display in the Commodore booth was interesting and educational. The walk through the Commodore time machine took you from the very beginnings of the company when typewriters and adding machines were their best products right up to today's Amiga 4000.

Did you know?

Commodore began in the late 1950's as a typewriter sales and repair shop in downtown Toronto.

In 1969, Commodore began making its own electronic calculators, and was the first company to offer a hand-held calculator, the C110.

In 1976-77, Commodore introduced its first 8-bit computer, K.I.M., followed by the first personal computer, the PET (Personal Electronic Transactor).

The Commodore 64, first shipped in 1982, quickly became the top-selling microcomputer in the world, with 25,000 units shipped each month.



World of Commodore Amiga Toronto 1992

Exhibitors

ASDG Incorporated
925 Steward Street
Madison, WI 53713
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Axiom Software
541 West 98th St. #322
Bloomington, MN 55420
Inquiry #244

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Woodstock, ONT., N4T 1P1
(519) 539-0200
Inquiry #245

Canada Remote Systems
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Mississauga, ONT., L4W 2P9
(416) 620-1439
Inquiry #246

Centaur Software
4451-B Redondo beach Blvd.
Lawndale, CA 90260
(310) 542-2226
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Commodore Business Machines
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Agincourt, ONT., M1W 3G3
(416) 499-4292
Inquiry #248

Digital Creations
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Folsom, CA 95763-0097
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Southfield, MI 48076-2553
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San Mateo, CA 94404
Inquiry #251

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Fremont, CA 94539
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Arlington, VA 22206
Inquiry #253

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5155 Spectrum Way Unit 5
Mississauga, ONT., L4W 5A1
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King of Prussia, PA 19406
Inquiry #255

Hamilton Amiga Users Group
4465 Rogers Road
Burlington, ONT., L7L 1F2
Inquiry #256

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Racine, WI 53406
(414) 632-3766
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Rockford, IL 61101
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J7V 2K0
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St. Louis, MO 63123
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The Blue Ribbon SoundWorks LTD
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Suite 200
Atlanta, GA 30324
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TPUG
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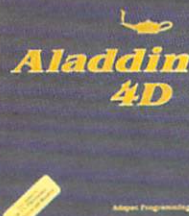
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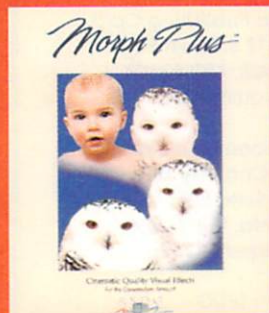
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IMAGEMASTER PROFESSIONAL	149.00
IMAGEMASTER FIRECRACKER	139.00
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TUTORIAL VIDEO	79.95

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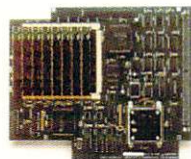
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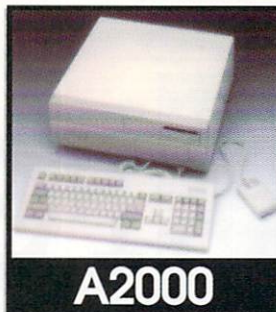


The FASTEST A3000 Accelerator

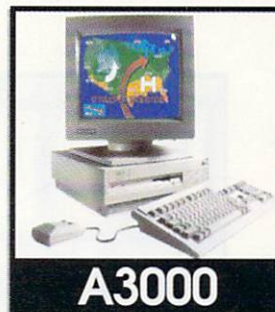
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A2000



A3000

Call for system prices

Example system configuration:

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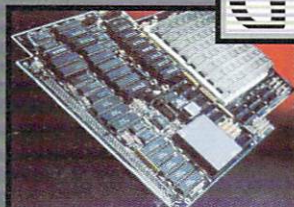
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Start with a basic Toaster 2.0 machine, then add any hard drive, hard drive controller and monitor that you want. Optionally you may want to add an accelerator and/or Time Base Corrector board, or you can choose one of our pre-configured systems.

Clue of the Month

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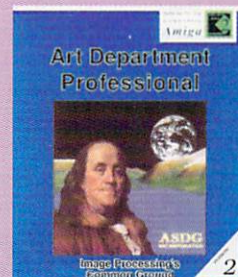
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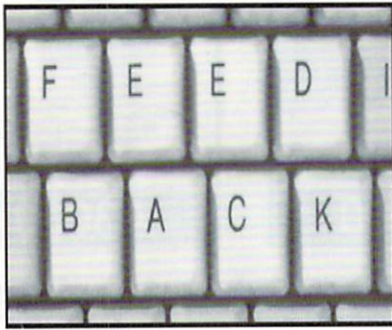
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Feedback

Letters to the Editor

edited by Paul L. Larrivée

This month's Letters to the Editor include a plea for Spanish-language wordprocessors, a request for free upgrades, and a fervent wish list.

Spanish Wordprocessors, Please!

In the annual exposition Fércomputo in San José, Costa Rica, I saw the Amiga 3000 at work and was really amazed and convinced to sell all my frustrating Windows PC hardware and software. What a cruel disappointment, however, when I learned that:

(1) No wordprocessor or desktop publishing software for the Amiga has a *Spanish spelling checker*!—something even the most modest PC software has.

(2) The only OCR program—Migraph—is not able to read Spanish characters: ñ, ¿, ¡, é, etc.

So what? How can it be that so advanced, interesting, and powerful a product like the Amiga, light years ahead of PC and Mac systems, is useless in Latin America simply for the lack of some easily remediable software? For us, the Amiga system is like a Ferrari sports car—without the tires.

Can you give us any hope that this problem will soon be fixed? My checkbook is ready—just waiting for a signal from a software developer. "Amiga" is a Spanish word which means friend. So then there is an Amiga friend for the rest of the world but not for Spanish-speaking people.

P. Antonio Lootens
San Isidro de E.G.
Costa Rica, C. A.

Developers, please take note of the number of Spanish-speaking people in the world.—PLL

Another Note on 2.04

After reading the last four issues of *Amazing Computing's* "Feedback," I feel that it is time to write my own letter regarding problems with 2.04.

I purchased the 2.04 upgrade for my A500 in September 1991. Since that time, I have become aware of the incompatibility of some software, mostly games. At the time of purchase, however, I couldn't know that one of the main features of 2.04 would cause me headaches for over a year. The use of Compugraphic Fonts was the main reason for my purchase of the upgrade. After trying to use fonts in *ProWrite* and other disk-font-related software, including the Fountain program, I received a message on all occasions informing me that the disk font library was not version 37. This led me to Commodore Express Service.

Here is where I was informed that Commodore was aware of the problem and would release an update in the near future. To make a long story short, I have tried every possible solution suggested by Commodore. It is now December 1992, and I still do not have use of the Compugraphic Fonts. Moreover, this problem is but only one feature of the 2.04 that has a major bug. Yes, I know, the upgrade was supposed to fix the bugs in 1.3 and at the same time provide an upgrade operating system with new features. Now these new features have bugs so that once again Commodore has a new upgrade—2.1. Well, for their own sake,

I would suggest to my fellow Amiga users that they not purchase the 2.04 or 2.1 upgrade. At last check, the 2.04 upgrade is running just under \$90. The new 2.1 upgrade is around \$50 for those who already have the 2.04 upgrade. It seems that upgrading to 2.04 would only cost one more than upgrading to the 2.1. Now that 2.1 has been released, I have been informed by Commodore Express Service that I can solve my problems with the 2.1 upgrade, only that I would have to *purchase* it from a retailer! That is not what I was hoping for. I believe that since 2.04 was flawed to begin with that Commodore should provide the 2.1 upgrade free to the owners of 2.04.

Conrad Small
Cape Verde, AZ 86322

Air Force User Group Calls for Assistance

I'm currently stationed at Rhein-Main Air Base Germany with the United States Air Force. Several others and I are currently organizing an Amiga Users Group at the air base. The members of our group own a variety of Amiga 1000s, 5000s, 2000s, and a 3000. In ability we range primarily from beginners to a few experts in Amiga knowledge. Anything you can supply me on user group by-laws, user group information, subjects to cover at bi-weekly meetings, and suggestions for publishing a monthly user group bulletin would be greatly appreciated.

We are also interested in starting a public domain software library. Any

ordering information and offers that anyone can send would be greatly appreciated.

Adam Marston
PSC 5 BOX 2716
APO AE 09057

The first thing you should do, Adam, is to register your user group with AC's GUIDE for the Commodore Amiga, P.O. Box 2140, Fall River, MA 02722-2140. Others using the GUIDE will then be aware of the existence of your group at a U.S. Air Base in Germany. Anyone else, especially members of well-established user groups who can offer help, should write to Adam at the APO address listed above.—PLL

Further Words on AmigaDOS

Reading S.M. Oakland's letter in the "Feedback" column, AC V7.11, has prompted me to respond. I have AmigaDOS 2.04 and 1.3 installed, selectable by KickBack. My system boots on AmigaDOS 2.04.

I have had no problems with *Money Mentor*, circa 1988. It's possible that S.M. Oakland is trying to boot off the *Money Mentor* disk. I suggest that he do as I do—load *Money Mentor* from its icon using WorkBench.

I also own *Maxiplan V* 1.8, circa 1987, and have had no problems. I hope this helps.

Tony Albright
Kingsville, TX 78363

Your suggestions may help others, too, Tony.—PLL

Amiga Products Around the World

It is with utmost sincerity that I write this letter, as I do believe AC suits me better than any other magazine I'm buying. It has a certain "feel" that agrees with my wants. Please keep up the good work!

My main problem is the lack of availability of Amiga products. So far, there are only two dealers here, and they sell for more than twice the regular retail price. One cannot really blame them, for custom and import fees are very high. I'm only a college student so I can't buy software without starving for a week or two. I have thought of ordering directly from the U.S. but then I would still need to deal with customs.

I got my Amiga in the summer of '91. My sister and I saw a Commodore Amiga ad in TIME magazine, the December 1990 issue. We were really interested and ordered from a family friend in the U.S. Regrets? None

Studying computer science, living in an IBM world, and being influenced by Amiga ads didn't make me give up easily. I live in the capital city and most of the six TV stations here use the Amiga. Still, Amiga users are in the minority. Imagine: an Amiga 3000 sells here for \$120,000 (U.S. \$=\$25)!

AC mags are priced at \$150! The Philippine peso may take some time to recover, if ever.

Even with a 52MB hard drive, I can't do much with only 2MB of RAM. I couldn't do hi-res anims in *DPaint* without running out of memory. At our current low money rate, it'll take a long time to recover the cost of the Amiga before I can buy extra memory.

In my dreams, I have 8MB of RAM, *Final Copy*, *Scenery Animator 2.0*, *AdPro*, *CDTV*, 80MB more of disk space, *Caligari 2.0*, megabytes of PD software, and a complete *OpalVision* system. As of now, I am good with *DPaint* and know a little of *AmigaVision* and *Sculpt 4D*.

As a musician, I have another list, but just *DSS8* is priced at \$4,500. Oh yes, a miracle system would really be great. Just dreams...

I'm only a loyal but depressed Amiga user wishing for more from a super machine. I might as well try to get along with what I have and be grateful. At a rough estimate, there are only two dozens owners here.

Lafayette A. Kim
Manila, Philippines.

Readers whose letters are published will receive five public domain disks free of charge. Write to:

Feedback
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P.O. Box 2140
Fall River, MA 02722-2140

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The World of Commodore mit Amiga 92

Frankfurt, Germany

While the rest of Americans were enjoying their Thanksgiving Day feast, this intrepid reporter was attending the "World Of Commodore mit Amiga 92" held in Frankfurt Germany. The only way to begin comparing this latest German show to shows held in North America is to say that there's no basis for comparison.

Held over four days (from November 26 to 29) the show attracted more than 40,000 attendees with the Saturday crowds being downright suffocating. These thousands came to see approximately 160 exhibitors ranging from *two* large stands from Commodore to respectable booths from Borland and Intel. Remember that Commodore is a major provider of IBM compatible computers in Europe, as demonstrated by the presence of companies like Borland and Intel. I must say, however, that these booths were lightly attended even while there were crushing crowds elsewhere.

As a rough estimate, the exhibitors were evenly divided between actual manufacturers and retailers. Unlike German shows of the past, there were very few North American manufacturers in attendance. Software providers included entertainment giants Electronic Arts and Spectrum Holobyte; leading authoring system provider INOVATronics, which has recently opened an office in Germany; image-processing giant ASDG; and compiler giant SAS. As for North American hardware providers, only Supra and RCS Management, which were both represented by their German sister companies, had booths.

On Thursday, Thanksgiving Day, the show was reserved for "experts." The admission price on this day was higher—at 25 DM or around \$17.50—than on the other days, with admission price being 15 DM or around \$10.50. Perhaps this inexpensive

admission price is partly the reason for the much larger turnouts at German shows, as North American shows have cost as much as \$25 for admission.

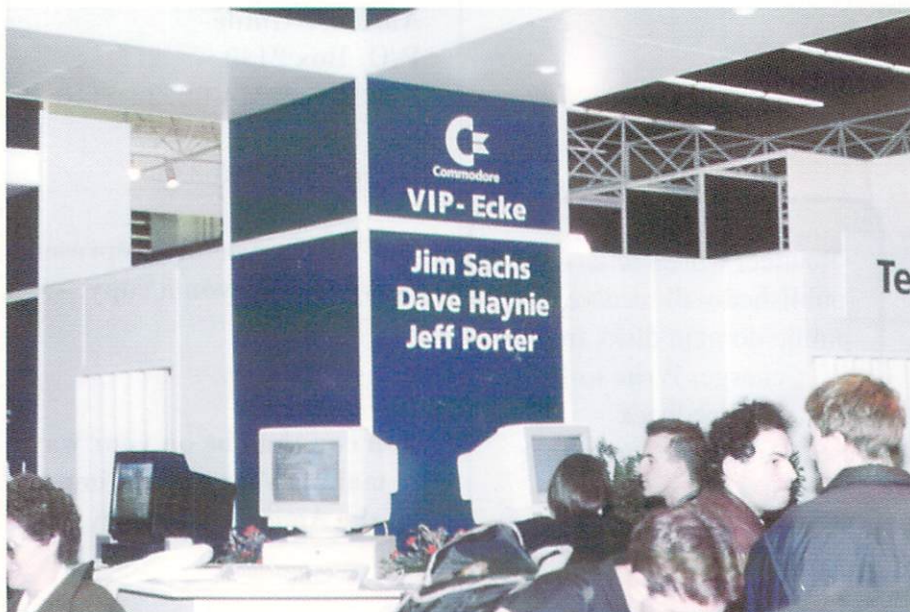
The show was held in Halls 6.0 and 6.1 of the Frankfurt Messe, which, by the way, is easily the largest convention center I have ever seen. On the first floor, Commodore had a very large stand featuring a VIP Corner where Jeff Porter, Jim Sachs, and Dave Haynie were available to answer questions and sign autographs. There were tons of Amiga 1200s and CDTV's on display showing consumer-oriented products such as gameware.

The consumer orientation of Commodore's first-floor booth was shared by the other booths on this floor. The Airbus A310 flight simulator booth, for example, featured an actual mock-up of the business end of an Airbus A310. There was a driving simulator, complete with a real Ferrari and a huge projection screen. And, one booth drawing attention to the Olympic Games to be held in Berlin in the year 2000 displayed several Mercedes Benz automobiles, a large trampoline with a pair of acrobatic clowns, a huge scale model train display, and great food. Elsewhere was a booth featuring Velcro jumping, and another booth with a towering virtual reality "experience chamber" built on a gut-wrenching hydraulic system.

Speaking of food, I was amazed when I entered the press lounge and was offered a full luncheon with all the beer I could drink absolutely free. Again, the North American shows have a lot to learn from the Germans; free food for journalists would definitely boost Amiga coverage by non-Amiga press!

Commodore's stand on the second floor took a more professional slant, as did the whole second floor. Commodore showed 386 and 486 PC systems along with A4000 business/video/music solutions. Commodore demonstrated the complete process of creating four-color brochures, from raw material to finished films, right in their second-floor booth. They had an A4000 connected to a scanner, film recorder, and a Linotronic L330 phototypesetter, being run by ASDG's Art Department Professional. Page integration and layout was performed with Softlogic's PageStream. They even had a Linotronic chemical bath on hand to develop the exposed films.

There were a large number of new video hardware products, many of which are not yet available in North America. In fact, it seemed that every manufacturer's booth on the second floor offered either a new video display board or digitizer. There were so many

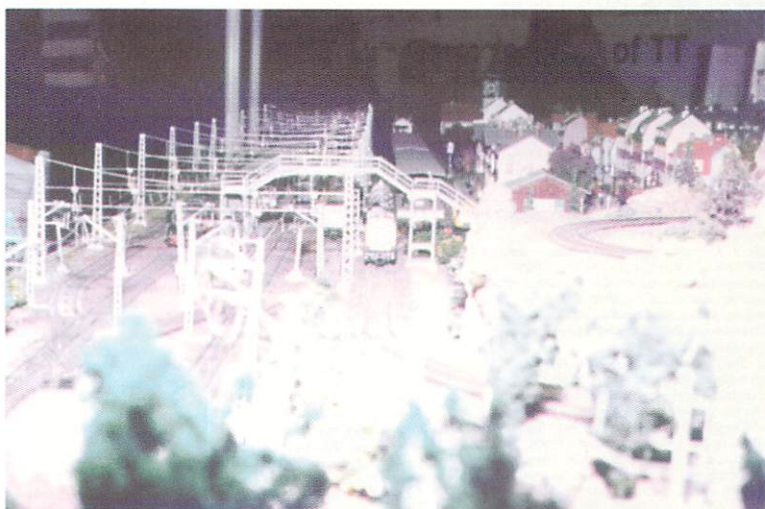


•A special report from Europe's most spectacular Commodore show!

products of this type that listing them here is impractical. Several of the manufacturers I spoke with indicated that plans to bring their products to the North American market were already underway. Also, there was a larger number of small German software developers showing their wares than in years past. Small companies like proDAD, showing a "super smooth animation" utility, were typical of these. The presence of more small German software companies suggests to me that the days of *undisputed* North American dominance in Amiga software may be drawing to a close.

Surprisingly popular, to a North American, were the several new enhanced printing utilities. This, coupled with frequent printer reviews appearing in German magazines, suggests that German Amiga owners take printing much more seriously than their North American counterparts. Also, there were lots of handheld scanners to be found as well as at least two providers of OCR software. Several stands featured a great deal of educational titles covering subjects ranging from math and spoken languages to geography and ecology.

Taking a seat outside the entrance to the show told me an important story. Amiga 1200s were flying out the door. Too bad Commodore could not release the A1200 in the U.S. as early as

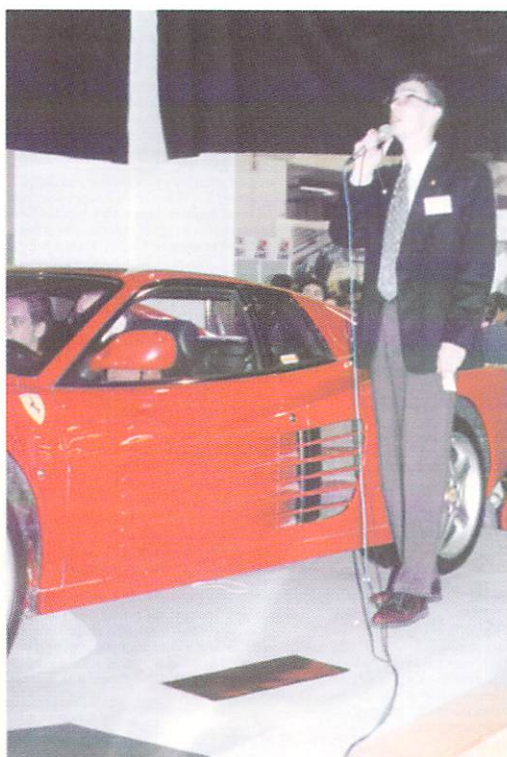


they did in Germany. A surprising number of A4000s were seen leaving the premises. Perhaps this is indicative of a general movement upscale for the German market?

Another point of note is that Commodore has begun an Amiga Direct service in Germany. This means that end-users can by-pass their local dealers completely and purchase computers at competitive prices directly from Commodore. To be honest, I don't know what this means. Certainly, it can't be pleasing to Commodore's dealers who now face competition directly from the manufacturer.

In summary, it was a tremendous show. The level of success of this show—given that another Amiga show had taken place in Germany only a month before—was fairly amazing. I don't know what advice to give to the people putting together North American Amiga shows, which are nothing short of anemic compared to the German shows. Too many shows in North America have definitely hurt. Better organization, cheaper admission, and better promotion would all improve shows on this side of the Atlantic. As far as the German marketplace goes, there certainly were many games being sold but there was also keen interest in upscale hardware and professional software. Several of the video hardware providers I spoke to said that they had completely sold out of all of the product they brought to the show. This speaks well for the Amiga marketplace not only in Germany but throughout the world. From the looks of things, 1993 will be an excellent Amiga year.

•AC•



The World of Commodore show in Frankfurt featured everything from Amigas and Commodore PCs to fast cars and trains.

The Fred Fish Collection

Below is a listing of the latest additions to the Fred Fish Collection. This expanding library of freely redistributable software is the work of Amiga pioneer and award winning software anthologist, Fred Fish. For a complete list of all AC, AMICUS, and Fred Fish Disks, cataloged and cross-referenced for your convenience, please consult the current **AC's Guide To The Commodore Amiga** available at your local Amazing Dealer.

Fred Fish Disk 751

Annotate A text editor written for ADOs 2.04 only. Takes advantage of Public screens and the system default font. Features include folding, shifting, vertical cut and paste, full clipboard support, macros, scroll bar, editor buffering, printing, text locking and a tools menu. Version 1.8, an update to version 1.0 on disk number 641. Binary only. Author: Doug Bakewell

CheatFont A simple program which patches the TOPAZ/8 font. You can use one out of FIVE implemented fonts, but it's also possible to install external fonts via the req library and/or the reqtools library. Also included in the package are 30 demofonts. OS/2.0 required, freeware, binary only. Author: Nils 'Jon' Görs

PPMC The Powerpacker Mini Clone. This is powerpacker library meeting gadtools library: A small utility, useful for compressing any text or data file. Version 1.1 which includes the C source for both SAS/C & DICE. Author: Reza Elghazi

ReflexTest A game which tests your addition, subtraction, or multiplication skills. The goal is to answer several math questions in the shortest possible time. A continuation to the version found on disk number 713. Binary only. Author: Jason Lowe

VCLi Voice Command Line Interface allows you to execute CLI or AReXX commands, or AReXX scripts, by spoken voice command through your Perfect Sound 3, Sound Master (Sound Magic), or Generic audio digitizer. VCLi is completely multitasking and will run continuously in the background, waiting to execute your voice command even while other programs may be running. With VCLi you can launch multiple applications or control any program with AReXX capability completely by spoken voice command. VCLi is compatible with both NTSC and PAL. This is version 5, a major upgrade and replacement for version 4 on disk number 618. Binary only, requires AmigaDOS 2.0. Author: Richard Horne

YearPrintQ Prints a calendar of the year onto four sheets of paper. The GUI adapts itself automatically to the actual system font. With AmigaOS 2.1, a localization also takes place (currently German and French). A configuration file with any holiday or special occasion definitions can be chosen through file requester or "drag and drop". The calendar can be printed on every printer supported from AmigaOS either with IBM graphics or ASCII characters. Version 2.5, requires at least AmigaOS 2.0. Includes source. Author: Dieter Temme

Fred Fish Disk 752

ToolManager ToolManager is a full featured program for either WorkBench or CLI tool management. Includes the ability to add menu items to the 2.x "Tools" menu, add WorkBench icons or dock Windows. Features multi-column docks that automatically detect largest image size, AReXX, sound and Locale support. This is version 2.0, a complete overhaul since version 1.5 on disk number 551. Complete new "object-oriented" concept and configuration is now handled by a preferences program. Includes source, lots of graphic images, and programmers support for using the toolmanager library. Requires 2.x for full functionality. Author: Stefan Becker

Fred Fish Disk 753

AskFirst A software disk write-protection. With the permission of the user, disables floppy writes even on write-enabled disks. Switches to enable/disable states with a gadget. Runs from both WorkBench and CLI. Includes source in assembly. Author: Kamran Karimi

Mostra A shareware IFF utility featuring real-time unpacking scroll, dozens of options, "smart" analysis of any IFF file (FORMs, LISTs, also nested ILM), total control over display modes, simple slideshow processing, pattern matching, multi-palette, double buffering, fast decompression, color cycling, TexDocs, startup files for easy custom configurations and complete

WB support. Version 1.08, binary only. Author: Sebastiano Vigna

SuperDuperA very fast disk copier and formatter. Can make up to four unverified copies from a ram buffer in 36 seconds. Verified copies from a ram buffer take 67 seconds for one destination drive, plus 34 seconds for each additional destination. This is version 2.02, an update to version 2.01 on disk 590. Includes a program to fine tune some fields in the trackdisk device, and a "no click" type program. Binary only. Author: Sebastiano Vigna

Yak "Yet Another Kommodity". Features a sunmouse that only activates when mouse stops. KeyActivate windows, Click windows to front or back, Cycle screens with mouse, Mouse and Screen blanking, Close/Zip/Shrink/Enlarge windows with programmable hotkeys, Activate Workbench by hotkey (to get at menus when WB obscured), Pop up a palette on front screen, Insert date (in various formats), KeyClick with adjustable volume, Pop-Command key for starting a command (like PopCLI), Gadtools interface. All settings accessible from Workbench tooltypes. Version 1.0, includes source. Author: Martin W. Scott

Zoo Another independent port of Zoo version 2.10, this version includes source. Zoo is a file archiver, much like "arc" in concept, but different in implementation and user interface details. Version 2.10, an update to version 2.00 on disk 164. New features include greatly improved compression, preservation of full pathnames by default, and extended multi-screen help. Includes source. Author: Rahul Dhesi, Amiga port by Olaf Seibert

Fred Fish Disk 754

ARexxAppList The ARexx Application List. A list (plain text) of approximately 175 Amiga programs that support ARexx, with brief descriptions of their capabilities. Updates are posted in the USENET newsgroup comp.sys.amiga.applications. Version dated October 15, 1992. Author: Daniel J. Barrett

BootLogo Designed for machines displaying a white screen during boot-time. Displays a nice picture that automatically terminates as soon as the first window is opened during the boot process. Requires AmigaDOS 2.0 or higher. Version 1.0, binary only. Author: Markus Illenseer

Enforcer A tool to monitor illegal memory access for 68020/68851, 68030, and 68040 CPUs. This is a completely new Enforcer from the original idea by Bryce Nesbitt. It contains many new and wonderful features and options and no longer contains any exceptions for specific software. Enforcer can now also be used with CPU or SetCPU FASTROM or most any other MMU-Kick-start-Mapping tool. Major new output options such as local output, stdout, and parallel port. Highly optimized to be as fast as possible. This is version 37.25 and requires V37 of the OS or better and an MMU. Author: Michael Sinz

SmartDisk A 512K pre-fetch SCSI cache that currently supports XT device, gypsies.device and SCSI device. For users with not more than one drive on a device only. Version 1.3.1, includes source. Author: David Le Blanc

SoftTrack Opens a little window that shows the current track number of the heads of each floppy drive and whether a read or write operation is in progress. Runs from both WorkBench and CLI. Includes source in C and Assembly. Author: Kamran Karimi

Win2Front A simple, small and pure utility similar to Shell2Front on disk number 741. This program adds the ability to specify the name of the window to be brought to the front. Version 0.21, binary only. Author: Gérard Cornu

XPK An interfacing standard between applications and packer libraries. Any XPK application can handle every XPK packer. Includes applications: A (de)compressing file handler, a packing app-icon, command line packers, a LoadSeg() patch, adapted image display and movie player, and many more. Also included: 4 nice packers, 2 very safe encryptors, and some demonstration libraries. Version 2.4, includes developer's application kit. Author: Urban Dominik Mueller, Bryan Ford and others

Fred Fish Disk 755

OctaMED Save-disabled version of the full-featured OctaMed-Pro, a commercial product. OctaMed is the 8-channel version of MED, a music editor which was originally designed for making music for programs (demos, games, etc), but works well as a stand-alone music program. This is version 4.00, an update to version 1.00b on disk number 579. Includes several sample songs. Author: Teijo Kinnunen and Ray Butt-Frost

Fred Fish Disk 756

KOE2 Three-turn demo of the strategy role-playing game Kingdoms of England II, where up to six human or computer players compete for nearly 200 territories of the old British Isles. Features excellent, scrolling, 64-color extra half-brite graphics. Requires 1Mb minimum memory. Binary only. Author: Brian Vodnick and Realism Entertainment

PopUpMenu A small program that makes it possible for you to use pop-up menus with any program that uses standard intuition menus. Version 5.0, an update to version 4.3 on disk 667. Includes source. Author: Martin Adrian

Run68013 Emulates 11 of the 68020-specific instructions and its registers in a system with 68000. It does so using 68000 instructions and memory. None of the new 68020 addressing modes are supported. Runs from both WorkBench and CLI. An upgrade from the Run68010 on disk number 638. Includes source in assembly. Author: Kamran Karimi

Fred Fish Disk 757

CMemo A couple of nifty animation demos created with GVP's new stand-alone morphing package CineMorph(tm). CineMorph features the ability to warp single images, morph between two or more images, and even morph between moving sequences of images, with an easy-to-use interface. Extremely fast rendering times, and the ability to output to a variety of formats (including direct support for HAM-E, DCTV, and generating Op-5 ANIMs). Author: Great Valley Products

FollowMouse A pair of small blinking eyes following the mouse movements on the screen. Runs from both the WorkBench and CLI. Includes source in PASCAL. Author: Kamran Karimi

PC Printer Controller Sends escape codes to the printer according to ANSI standards to aid using various capabilities of the printer. Intuition interface, runs from both the WorkBench and CLI. Includes source in assembly. Author: Kamran Karimi

Uhr A small configurable digital clock (Uhr is German for "clock"), that makes use of the FormatDate() function in WorkBench 2.1's locale library. Requires at least Kickstart 2.04 and WorkBench 2.1. Includes source. Author: Stefan Sticht

WBStart WBStart is a package to emulate the WorkBench startup procedure, by loading a program, creating a process for it, and then sending it a WB startup message. Includes a handler process which does the starting of the processes for you and then waits for the startup reply messages. Version 1.2, an update to version 1.0 on disk number 572. Includes source. Author: Stefan Becker

Fred Fish Disk 758

BFormat Formats disks that have media (or hard) errors on them and allocates them as used, making the rest of the disk usable. Similar to BFormat on disk number 493, but apparently independently authored. Supports FFS, OFS and most devices, including hard-drives. Version 4.0, includes source. Author: T.A. Nery, R.W. Bowers, Bob Bush

GeoTime A software "Geochron" that allows you to see the earth's shadow scroll across the world map or globe in real time, showing the earth's day/night state. This is version 1.2b, an update to version 1.0 on disk number 180. Runs under AmigaDOS 2.1 whereas earlier versions had some problems. Shareware, binary only. Author: Mike Smithwick (Distant Suns, AmigaTrek)

MemMometer A program that opens a narrow window and graphically displays your memory usage like a gauge. Warps mode will detect changes in regions of memory over time. Detected changes are categorized and displayed using color coded bands. This is version 2.40, an update to Version 2.20 on disk number 496. Can be used with AmigaDOS 1.2 to 3.0; does 32-bit memory addresses. New with version 2.4 is an AReXX port for menu functions. Includes source in C. Author: Howard Hull

Mine A new Modula-2 implementation of an old computer game. You have an N * N square with mines hidden in some fields. Your job is to mark them with a flag as fast as possible. High-score lists are supported. Version 1.6, an update to version 1.0 on disk number 725, contains several improvements and a bug fix when operating under OS 39.x. Requires AmigaDOS 2.0, includes source. Author: Thomas Ansonce

NoChange Saves some important system vectors at the start of execution and periodically checks them to see if they've changed. A universal virus finder. Runs from both WorkBench and CLI. Includes source in C. Author: Kamran Karimi

SysInfo A program which reports interesting information about the configuration of your machine, including some speed comparisons with other configurations, versions of the OS software, etc. Lots of new enhancements including information on devices, resources and ports, and graphical speed comparisons. This is version 3.01, an update to version 2.69 on disk 642. Binary only. Author: Nic Wilson

WorldTime A clock that can show you the time in any city in the world. The times are calculated automatically using data supplied by the user. Rewritten to take advantage of features available under Kickstart 2, and thus will not run under 1.2 or 1.3 any more. A commodity that can be run from the workbench or CLI. Version 2.1, an update to version 1.31 on disk number 583, binary only. Author: Jonathan Potter

Fred Fish Disk 759

ABackup A powerful backup utility that may be used both for harddisk backup and for file archiving. Has a full intuition interface (as well as a "batch" mode), can save/load file selections, handles HD disk, etc. Includes both a French and an English version. This is version 1.60, an update from version 1.31 on disk 706. Shareware, binary only. Author: Denis Gouelle

AZap A "new generation" binary editor able to edit files, memory, or devices like hard disks. It can open several windows at the same time, handle FFS/OFS file systems, and has a lot of functions (fill block, compute checksum, base conversion, etc.). Includes both a French and an English version. This is version 1.00, binary only. Author: Denis Gouelle

BioRhythm An intuition based easy-to-use program that shows your 3 basic BioRhythms plus the average "rhythm". Take a look, dump it to your printer and make your plans for "when to do what". This is version 1.0, binary only. PAL version. Source available from author on request. Author: Thomas Arnefeldt

CDTV-Player A little utility for all those people, who'd like to play Audio-CD's, while multitasking on workbench. It's an emulation of CDTV's remote control, but is a little more sophisticated. Version 1.06, binary only. Author: Danny Amor

ChemBalance An AReXX script to balance unbalanced chemical equations. With ChemBalance in ram, enter "rx ram:ChemBalance" from a CLI or Shell window. A prompt should appear from which you can enter an unbalanced chemical equation for ChemBalance to try to balance. Version 1.0, requires AReXX. Author: Patrick Reany

LSlabel A simple label printing utility. Very powerful as the user can/must do a lot of settings by himself. Features include variable linefeeds (in 1/2 inch steps) between 21 independent lines and freely configurable printer codes. Version 1.29, an update to version 1.12 on disk 586, binary only. Author: Stefan Berendes

Fred Fish Disk 760

ARestore Permits you to restore accidentally deleted files. Works on all Amiga partitions (Floppy, Hard disk and RAD). Intuition interface where user can select between one of three different languages: English, French and German. Version 1.00, binary only. Author: Jean-Yves Proux

BootJob The BootBlock Utility. Includes functions to store, install, view or execute any disk bootblock. Also, self-made bootblocks can be installed to disk. The most powerful function is to save any bootblock as an executable CLI-File. Now you can start any boot-util, viruschecker, game, or loader from the CLI. Also includes a drawer with 33 bootblocks from the BootX BootBlock-Library. BootJob requires Amiga OS/2.0. Version 1.00, shareware, binary only. Author: Michael Bialas

FIM The Fast-Intro-Maker. Use this little IntroMaker to create your own Intros in a few minutes. Includes functions to insert selfmade IFF-Pictures, Color-Screenshots and more. Final created Intros will run on OS/2.1/3.2/0 (WB/CLI). F.I.M. requires Amiga OS/2.0. This is version 1.00, shareware, binary only. Author: Michael Bialas

Fleuch A little game with more than five extra large stages. The object is to pick up your cargo and climb safely to the next stage, without being shot or running into anything, (including your cargo). Scrolling, shooting, some gravitation, similar to Thrust (C64). Binary only. Author: Karsten Götz

JcGraphDemo Demo version of a ShareWare Business grapher with an Intuition interface. JcGraph can show your data as bar, line, planes, stack, blocks, 2D and 3D, etc. Features realtime rotation around X, Y, Z axis, on-line help, professional looking 2D and 3D graph output, and more. Can output EPS, 3D GEO, AegisDraw2000 and IFF ILBM format files. Demo version 1.100, an update to demo version 0.903 on disk 671. Binary only. Author: Jean-Christophe Clément

Memmin A little utility that will measure and continuously report the maximum amount of memory used by a program and the minimum level of memory remaining. Freeware, assembly source included. Author: Chas A. Wyndham

P-Compress A compression program that produces smaller files faster than any other current general-purpose cruncher, using LZH compression algorithms. Can handle single files, whole drawers, disks, or selected files or types of files within drawers and disks. Includes compression and decompression object files which can be linked to your own programs to allow them to access and output data in LZH format. Version 2.5, an update to version 2.3 on disk 650, now has the ability to recognize and recompress power-packer files. Freeware, binary only. Author: Chas A. Wyndham, LZH code by Barthel/Krekel

S-Text Turns texts into completely self-contained, self-displaying compressed files callable from Workbench or a CLI. S-Texts will save disk space and can be transferred from disk to disk without having to think about reader and decompression compatibility. Freeware, binary only. Author: Chas A. Wyndham

Fred Fish Disk 761
AztecErr A Manix quickfix support program. If you use the quickfix option of AztecC version 5.xx, you can set CCEdit to this program. It opens a window which displays all errors one after another. It also has an ARexx port and a gadtools user interface. Optionally uses the RexxHost library (c) by MXM. Version 1.0, OS 2.xx only, freeware, binary only. Author: Hans-Peter Guenther

BlitA graphic utility to help blitter-programmers with Mintermers. Reads a standard IFF picture for experimentation and writes out any results if required. Version 1, binary only. Author: Paul Juhasz

InstallerA replacement for the installer tool by Commodore. It's an interactive, user-friendly installer, that can perform a complete, sophisticated installation. GadTools user interface and the ability to save a preferences file and a lots of options. Step by step installation, ask, update, makedir, options, etc. Controlled by a simple script which contains the names, patterns and/or vars of the installation programs. OS 2.xx only, includes installation script for itself. Version 3.1, freeware, binary only. Author: Hans-Peter Guenther

LE-NAG LeverEdge NAG is a program to remind you of events before you miss them. Events can be scheduled to occur once or repeat daily, weekly, monthly or yearly. You can be alerted of the event in a number of ways from a screen flash to a message requester. Version 92.10.21, an update to version 92.05.02 on disk 683. Shareware, binary only. Author: Craig M. Lever

MemWaste Allocates all fast memory except a user specified number of bytes. Allocation is freeable with another call to MemWaste. Useful if you do not want to waste 32-Bit-RAM for your 1 MB RAD. Version 1.0, first release. Includes source in assembly. Author: Thies Wellpott

PassWord A little password program, not intended to give protection against professional hackers but more like keeping little sisters and/or friends from using your system without your permission. This is the first release version 0.1. OS 1.3 and 2.xx, freeware, binary only. Author: Hans-Peter Guenther

RemLibA little CLI tool that closes the specified libraries in a system-friendly way. Ability to specify multiple libraries with return status about the success of each one. Codesize about 2 KB. Version 1.2, OS 2.xx only, includes source in C. Public domain. Author: Hans-Peter Guenther

SFragsMem Graphically shows memory fragmentation. The graphic display is sizeable. Also displays some other information of the exec memory header. Version 1.01, first release, requires OS 2.0. Includes source in C. Author: Thies Wellpott

Struct-Saver A utility to save the whole menu or gadget structure of a window as C-source code. Useful if you want to make a 2.0-tool running under 1.2/1.3, gadtools generates all necessary menu structures in memory, this tool saves them as source code. Version 1.20, first release, requires OS 2.0. Includes source in C. Author: Thies Wellpott

Fred Fish Disk 762
PlotMap PlotMap is a tool like DrawMap from Bryan Brown that draws a map of the world's surface. PM uses the same map files as

DrawMap 4.0/4.1 but has several improvements: much faster, runs on 512 KB machines with just one floppy, more configurable, zoom box from a box map, definable screen mode, abortable drawing. This version requires OS 2.04. Version 0.85, first release. Includes source in C. Author: Thies Wellpott

Fred Fish Disk 763
BCBMusic This is the third set of original music in the BCBMusic series. This set includes the songs "Reactance", "Dreamscape", and "Transition". Like the first two releases (on disks 428 and 538), these songs are self-playing with no additional player programs required. WB2.0 compatible, binary only. Author: Brian C. Berg

InfoQ A replacement for the CLI 'Info' command. Has the option to display devices or volumes or specified devices only. Displays the columns "Size" and "Used" in MBytes or KBytes instead of blocks. Requires AmigaOS 2.04. Version 1.0, includes source. Author: Dieter Temme

MidiSynMonitor incoming MIDI messages. Displays a synthesizer on a PAL screen and redraws current state of all 61 keys at 50 frames per second. All interrupts turned off while running. Version 1.0, binary only. Author: Marcus Ottosson

NoArgs The Arguments Utility. Never again get weak-minded by typing those long Command lines including hundreds of Arguments/Parameters. With NoArgs you can create a new executable command that calls the original command and automatically passes it the arguments you specified, without having to execute any Batch/Scriptfiles. Requires Amiga OS2.0, version 1.00, binary only, shareware. Author: Michael Bialas

ReadRefs A tool that brings the ability of references file loadings to any editor that can call ARexx scripts or batch files. It does a fast searching and is compatible to the format of the DME and autodoc refs files. Includes sample scripts for TurboText and DME. Version 1.1, binary only, freeware. OS 2.xx only. Author: Hans-Peter Guenther

Sirds Generates & Prints 'Single Image Random Dot Stereograms'. These are 3D images viewed within a picture of seemingly random dots. Version 1.1, binary only. Author: Ross Fuller

Fred Fish Disk 764
AltKeyQ A commodity that allows the user to input characters thru ASCII code by holding the left ALT key and typing in the code on the numeric keypad. (same as on PCs with MS-DOS). With AmigaOS 2.1 a localization takes place (currently German). Requires AmigaOS 2.04. Version 1.0, includes source. Author: Dieter Temme

CLI-Tools Some CLI-use only tools. Includes a file splitter, a cold reboot utility, a test-if-command-is-resident utility, a 50Hz time delay, and a utility to calculate the "REAL" number of blocks used by a file. All include C or Assembly source. Author: Thies Wellpott

Gambit_Terp An interpreter for the full Scheme Programming Language which conforms to the IEEE/ISO and Revised Report standards. In addition, some code samples and tutorials are included. A companion disk, the Gambit Compiler can be found on disk number 765, it allows you to link in C code and build standalone native executables. It also contains complete sources for the interpreter and compiler. The interpreter is Freeware, and requires 1.5Mb to run. The compiler is shareware and requires about 3Mb and a hard disk for effective development. Author: Marc Feeley, Amiga work and documents by Ken Dickey

Fred Fish Disk 765
Gambit_Comp A compiler for the full Scheme Programming Language which conforms to the IEEE/ISO and Revised Report standards. Contains complete sources for the compiler and an Interpreter. (Interpreter binaries can be found on disk number 764). The compiler is shareware and requires about 3Mb and a hard disk for effective development. The interpreter is Freeware and requires about 1.5Mb to run. Author: Marc Feeley, Amiga work and documents by Ken Dickey

Fred Fish Disk 766
BBBase2View A Base-Viewer for Databases created with BBBase2. Advantages are faster database processing, viewing and more. Includes a print option for single records. Requires Amiga OS2.0, version 1.00, binary only, shareware. Author: Michael Bialas

ISAM A Server/Library. Even novice programmers can store/retrieve database records. Powerful, multi-user*, almost unlimited number/size of records/files. Different users may access same file, file/record locking (exclusive/shared), multiple keys/ file. Keys may: ascend/descend, overlap each other, have unique/repeatable values, be up to 499 bytes. Many record retrieval methods. Recover Index file if lost/ corrupt. Deleted record space reclaimed. Small: server < 49K. Resident Library < 8K. AmigaDOS

V1.2 and up, shareware, binary only. Version 1.01, contains examples w/source. Author: Scott C. Jacobs

MPE A compiler tool for users of the M2amiga programming environment. MPE does the same job better than your batch file. You can do everything with the mouse or the right amiga key. With this Modula-2 Programming Environment you can compile, link, and run your program. When there is an error, the editor is started automatically. You can set all switches for M2C, M2L M2Make, M2Project, and M2LibLink. This is version 1.38, an update to version 1.31 on disk 732. Binary only. Author: Marcel Timmermans

PPDO PowerPackerDataOnly, a CLI/Shell tool which uses the power-packer.library for (de)crunching data files. Many options available (crunching speed, speed up buffer size, etc.) Version 1.21, first release. Includes source in C. Author: Thies Wellpott

Switcher A set of utilities designed for Amiga owners who use a Hewlett-Packard LaserJet Series Printer and Pacific Data's PacificPage P.E cartridge. These utilities allow the user to leave the Postscript cartridge installed at all times, and switch easily between Postscript and PCL (standard HP) modes. Version 1.0, binary only. Author: Thomas L. Applegate

Fred Fish Disk 767
Addresser Name, Address and phone number database in a window. Features include merge file creation for most popular Amiga word processors, envelope printing, user-defined address formats, support for the Amiga clipboard device, and much more. Version 2.0, an update to version 1.0 on disk #559. Binary only. Author: Jeff Kelly

AntiCircuVir A link virus detector that detects 25 different such viruses. Version 1.6a, containing a small but important bug fix to version 1.6 on disk 733. Shareware, binary only. Author: Matthias Gutt

BackupUP A freely distributable, shareware hard drive backup program that features a custom Intuition interface, multi-floppy drive support, high-density drive support, incremental/full backups, on-the-fly compression using lha.library, optional verify, two types of backup logs and a restorable configuration. BackupUP requires Workbench 3.0. Version 3.77, an update to version 3.5 on disk number 724, contains several features, some optimizations and a several few bug fixes. Binary only. Author: Felix R. Jeske

FileEx Examines given file(s) and takes an educated guess as to their type. File types looked for include: fonts, icons, executables, objects, compressed, command scripts, C source, directories, iffs, LaTeX source, modula II source, shell commands and scripts, TeX source, dvi, uuencoded, yacc, zco, lha(rc). Version 1.1, an update by Gary Duncan to Version 1.0 by Edwin Hoogerbeets disk number 231. Changes include looking for a few more types, improving its IQ slightly, and amending source to compile ANSI-C under SAS/C 6.0. Includes C-source. Author: Edwin Hoogerbeets and Gary Duncan

TextRead A nice, fast, text file reader which was designed to replace More or PPMore. The text output is very quick, since the program writes directly into it's screen memory. The program supports printing, different tabsizes, fonts and screen modes. The search routines uses local.library, if present, so the case insensitive search works in Sweden too... Requires OS 2.04, ReqTools.library v37+ and PowerPacker.library v35+ (both included). Version 37.16, release 1.03. Freeware, binary only. Author: Martin Blom

TextRead A fast but quite simple ascii reader, which was designed to replace More or PPMore. The text output is very fast, since the program writes directly into it's screen memory. The program supports printing, different tabsizes, fonts and screen modes. The search routines uses local.library, if present, so the case insensitive search works in Sweden too... Requires OS 2.04, ReqTools.library v37+ and PowerPacker.library v35+ (both included). Version 37.16, release 1.03. Freeware, binary only. Author: Martin Blom

Fred Fish Disk 768
Uedit Part 1 of a three part distribution of the popular editor by the late Rick Stiles. Per Rick's wishes, the entire program, including source has been placed in the public domain so that it may continue to grow. This part contains the editor, con-file and support files, and lha.rc documentation. Parts 2 & 3 of the distribution may be found on disk numbers 769 and 770 respectively. Uedit is a completely customizable editor with a learn mode, a command language, menus, hypertext, online help, a teach mode, split windows, copy and paste, undo, spell-checking, many word-processing features and more. This is version 4.0, an update to version 3.0 on disk 622. Author: Rick Stiles

Fred Fish Disk 769
ALook An IFF ILBM display with lots of features! Displays Anims, Halm, extra half-brite, overscan, low-res, hi-res, lace, etc. Runs from WorkBench

or CLI, recursive wild-card selection, specifiable delays between displays, loop mode and more. Uses lha.library. Requires OS 2.0. Version 3.1, binary only. Author: Trevor Andrews

CopperPrefs A OS 2.0-style preferences editor that allows you to load, edit and save copperlists for your workbench. A little program will load your copperlist on startup and display it - exactly like IPreffs does. Includes some sample copperlists and the specification for a new IFF copperlist format. Requires OS 2.0+. Version 1.0, shareware, binary only. Author: Stephan Fuhrmann

LoadSpy A small System-Patch for the Dos.Library. It writes itself to the LoadSeg-Routine, displaying information about program names and load addresses from all files loaded with the LoadSeg routine. Requires OS2.0, version 1.0, binary only. Author: Michael Bialas

MeMon An intuition-based utility that allows you to monitor or change specific memory addresses. User may select byte, word, or long word alignment. Displays in binary, hex, and signed or unsigned decimal. Also useful for displaying ascii codes of various character key mappings and/or as a hex/binary/decimal converter. Version 1.0, binary only. Author: David Ekholm

PowerPlay A very powerful, user and system friendly module player. It can handle nearly all module-formats, supports multiselect, has hotkeys, has ASL and ReqTools filerequesters, has an ARexx port, can read powerpacked modules and comes along with its own cruncher that uses the lha.library. Version 3.4, an update to version 3.0 on disk 704, freeware, binary only. Author: Stephan Fuhrmann

Uedit Part 2 of a three part distribution of the popular editor by the late Rick Stiles. Per Rick's wishes, the entire program, including source has been placed in the public domain so that it may continue to grow. This part contains lha archives of the source, the spell checker and dictionaries and the proportional version of the editor, UEP. Parts 1 & 3 of the distribution may be found on disk numbers 768 and 770 respectively. Uedit is a completely customizable editor with a learn mode, a command language, menus, hypertext, online help, a teach mode, split windows, copy and paste, undo, spell-checking, many word-processing features and more. This is version 4.0, an update to version 3.0 on disk 622. Author: Rick Stiles

Fred Fish Disk 770
Uedit Part 3 of a three part distribution of the popular editor by the late Rick Stiles. Per Rick's wishes, the entire program, including source has been placed in the public domain so that it may continue to grow. This part contains several lha.rc archives of third-party support files, configurations and utilities. Included are emulation configurations for VI, EDT and wordstar, a directory utility, hypertext utilities, help key utilities and much more. Parts 1 & 2 of the distribution may be found on disk numbers 768 and 769 respectively. Uedit is a completely customizable editor with a learn mode, a command language, menus, hypertext, online help, a teach mode, split windows, copy and paste, undo, spell-checking, many word-processing features and more. This is version 4.0, an update to version 3.0 on disk 622. Author: Rick Stiles

To Be Continued.....

In Conclusion

To the best of our knowledge, the materials in this library are freely distributable. This means they were either publicly posted and placed in the public domain by their authors, or they have restrictions published in their files to which we have adhered. If you become aware of any violation of the authors' wishes, please contact us by mail.

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AC is extremely interested in helping any Amiga user groups in non-commercial support for the Amiga.

•AC•

And furthermore...

The Amiga Artists Group

by Merrill Callaway

In the spring of 1988, Eddie Johnson and seven other computer artists and designers founded The Amiga Artists Group (AAG) in Albuquerque, New Mexico. Over the last four years, the group has grown to more than 50 members, all of them using the Amiga as their primary creative tool. Eddie was instrumental in getting the AAG accepted as an official subgroup of the Rio Grande SIGGraph, a regional chapter of ACM SIGGraph, the Association of Computing Machinery, Special Interest Group Graphics, a prestigious group of mostly scientific and academic types from places such as Los Alamos Scientific Laboratories—you know, the folks who brought us the mushroom-shaped cloud. At SIGGraph, Los Alamos presents such hot topics as image enhancement for law enforcement. Now that international relations have thawed a bit, it's a useful "technology transfer" from the one used to read Soviet diplomats' license plates from an orbiting satellite. I remember that meeting illustrating image enhancement. They were showing how they enhanced the bullet holes in President Reagan's limo for the FBI. I can't recall if Hewlett Packard or Cray provided the refreshments, but I do remember one of the AAG members brought in a Video Toaster demo tape and impressed even that crowd!

AAG also has a loose association with the NEWMAUS (New Mexico Amiga Users Society), and conducts monthly meetings at the local Amiga dealer. Meetings are open to the public and no dues are required to join AAG.

This is the third year in a row that AAG has put on the "Palette of Light" computer art show at the KiMo Theater. The KiMo is a sort of 1920's "Southwestern Art Deco" landmark in downtown Albuquerque. Inside, the theater is ringed with lights mounted in cow skulls, and there is a gallery where Palette of Light hangs. The artists show their work as hard copy, videotaped animations, and computer slide shows. Eddie arranges for people to conduct demonstrations and workshops on computer art techniques. Palette of Light III mixes successful professional artists, such as Harry Morris using state-of-the-art equipment, with

amateurs using the most basic Amiga systems. Media range from framed photographs of computer art output to film recorders, to dot matrix, laser and color printer output, to tee shirts designed on an Amiga, to electronic and video displays and animations. The people who run the KiMo claim it is one of their most popular shows ever.

•AC•

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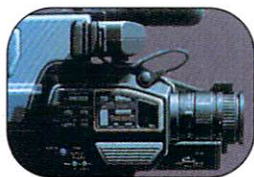


Computer artists Harry Morris (left) and Eddie Johnson (right) stand next to some of Harry's photographs.



The KiMo Theater is on "Historic Route 66," Central Avenue in Downtown Albuquerque, New Mexico.

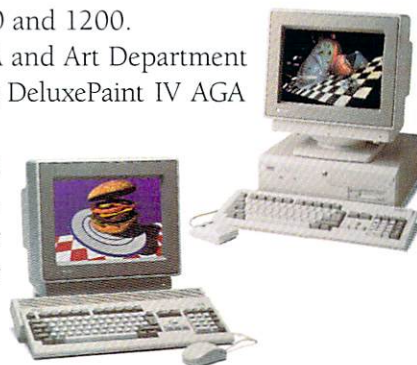
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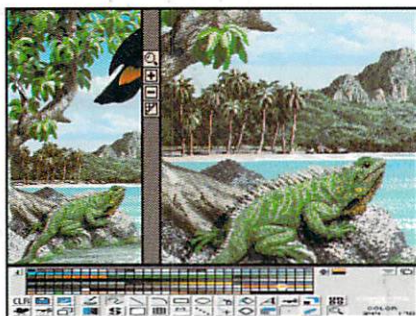
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